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Flute pedagogy of the eighteenth and nineteenth centuries: a comparative study of the flute treatises of Hotteterre, Corrette, Quantz and Boehm

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FLUTE PEDAGOGY OF THE EIGHTEENTH AND NINETEENTH CENTURIES: A COMPARATIVE STUDY OF THE FLUTE TREATISES OF HOTTETERRE, CORRETTE, QUANTZ AND BOEHM

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Master of Arts

by

Melody Holmes Schaefle

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APPROVED FOR THE DEPARTMENT OF MUSIC

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ABSTRACT

FLUTE PEDAGOGY OF THE EIGHTEENTH AND NINETEENTH CENTURIES: A COMPARATIVE STUDY OF THE FLUTE TREATISES OF HOTTETERRE, CORRETTE, QUANTZ AND BOEHM

by Melody Holmes Schaefle

This thesis compares the treatises of four prominent flute pedagogues of the eighteenth and nineteenth centuries; Jacques Hotteterre, Michel Corrette, J. J. Quantz, and Theobald Boehm. The paper focuses on the performance practices of each treatise and analyzes their influence on the present-day flutist.

Modern musicians must study and apply performance practices of past eras in order to produce music in a historically correct manner. The flute treatises examined in this thesis present diverse pedagogical and performance practices from which the contemporary musician can learn. Through the examination of methods used by flutists of previous centuries, the present-day flutist not only discovers performance practices valuable for his/her own performance, but gains further understanding of the instrument's evolution.

ACKNOWLEDGEMENTS

I wish to express my appreciation to Dr. Rebecca Herrold for her patience and guidance in the preparation of this thesis, to Mrs. Isabelle Chapuis Starr whose flute lessons have been both motivating and inspirational, and to my husband, Eric, without whose constant support this thesis would not have been possible.

TABLE OF CONTENTS

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

PART II: FLUTE PLAYING OF THE EIGHTEENTH AND NINETEENTH CENTURIES AND ITS INFLUENCE ON THE PRESENT DAY FLUTIST

TABLE OF CONTENTS (Cont.)

TABLE OF CONTENTS (Cont.)

LIST OF FIGURES

LIST OF FIGURES (Cont.)

LIST OF FIGURES (Cont.)

LIST OF PLATES

CHAPTER I

THE PROBLEM AND ORGANIZATION OF THE PAPER

I. THE PROBLEM

Statement of the Problem

The purpose of this thesis is to compare the treatises of four prominent flute pedagogues of the eighteenth and nineteenth centuries; Jacques Hotteterre, Michel Corrette, J. J. Quantz, and Theobald Boehm. The paper focuses on the performance practices of each treatise and analyzes their influence on the present-day flutist.

Importance of the Study

Each period of music history produces characteristic performance practices. Musicians must know the performance practices of the era related to the music they are playing in order to perform in a historically accurate manner. To gain insight into a particular era of musical style, the performer must research methods used by musicians of that period. Flute treatises of past centuries offer a variety of pedagogical and performance practices from which the modern musician can learn. Through study and analysis of these treatises, the flutist will not only develop into a better performer, but also gain further understanding of the instrument's evolution.

II. ORGANIZATION OF THE PAPER

This thesis is divided into two parts. Part I contains biographical

information on the lives and treatises of Jacques Hotteterre, Michel Corrette, J. J. Quantz, and Theobald Boehm. Also included in this section is a discussion of the eighteenth-century flute and its evolution through the nineteenth-century developments of Theobald Boehm. Part II contains chapters on posture, embouchure, articulation, ornamentation, practice methods, musical interpretation, and miscellaneous topics according to the flute treatises of the aforementioned pedagogues. Each chapter concludes with a section discussing the influences of each topic on the present-day flutist. The twelfth and final chapter provides a summary for the reader.

PART I

BACKGROUND INFORMATION ON THE TREATISES, THEIR AUTHORS, AND FLUTE DEVELOPMENT

CHAPTER II

BIOGRAPHICAL INFORMATION ON THE AUTHORS AND THEIR FLUTE TREATISES

I. JACQUES-MARTIN HOTTETERRE'S LIFE

The exact time and place of Jacques-Martin Hotteterre's birth is obscure, although it is speculated that he was born in 1680 and died in 1760 or 1761. He came from a family that for generations were known as master musicians and makers of musical instruments. Hotteterre was surnamed "*Le Romain*" as he was said to have resided in Rome during his youth. Upon his return from Italy, he quickly established himself as a master musician not only on flute but also on other instruments. He was a member of the "*douze grands hautbois et violins de la Grande-Écurie*," a band of musicians who took part in all the royal ceremonials at which music was played.[1] In this group, he played the bass oboe and bass viol positions. In 1707, he received the title of "*Ordinaire de la Musique du Roi*," and shortly thereafter was named "*Flûte de la Chambre du Roi*."[2]

Hotteterre was not only known as a performer, but as a pedagogue and composer. Jacques-Martin, often erroneously referred to as Louis, derived his reputation in part from his Principles of the Flute, Recorder and Oboe. He also authored several other books and composed numerous pieces of wind instruments.

II. HOTTETERRE'S PRINCIPLES OF THE FLUTE, RECORDER, AND OBOE

Hotteterre's treatise, Principles of the Flute, Recorder and Oboe, 1707, was the first significant instruction book of its kind for the flute. It contains a thorough explanation of the rudiments of playing the transverse flute, recorder, and oboe, and includes detailed fingering and trill charts for these instruments. Fifty out of seventy-three pages are devoted to the flute and performance on this instrument. Information found therein regarding articulation and ornamentation of the period is of value to players of instruments other than the flute. In his flute treatise, Hotteterre explained in detail the correct way to play such embellishments as trills, appoggiaturas, mordents and finger vibrati.

Because of the extensive transformations which the transverse flute has undergone during the last few centuries, many of these basic rudiments cannot apply to the modern performer. However, in regard to articulation and ornamentation of early eighteenth-century French music, Hotteterre's flute treatise has considerable practical value for the present-day student.

III. MICHEL CORRETTE'S LIFE

Very little historical data has been documented regarding Michel Corrette (1709-1795), the French organist and composer. As a performer, he held various posts, the last as organist to the Duc d'Angoulême (1780). Corrette's lasting fame has survived through his numerous instrumental compositions, church music, and works for the stage. In addition to these, he authored a vocal method and treatises for several instruments, including the oboe, violin, violincello, harpsichord, hurdy-gurdy, and flute.

Although Michel Corrette was not a flutist, his lack of first-hand acquaintance with the instrument did not prevent him from composing prolifically for the flute, nor from publishing a method for it. "Corrette was a perpetual Santa Claus to flutists, using liturgical themes and Christmas tunes in the Concertos Spirituels and Concertos de Noels for flute."[3]

IV. CORRETTE'S METHOD FOR EASILY LEARNING TO PLAY ON THE TRANSVERSE FLUTE

The date of Michel Corrette's flute treatise, Method for Easily Learning to Play on the Transverse Flute is controversial, although the year 1714 is agreed upon by most sources. "An examination of the internal content of the treatise certainly places it before the middle of the eighteenth century. The flute that Corrette discusses is the German flute with only the D# key."[4] Corrette mentioned nothing of additional keys as did writers of a slightly later period.

Corrette's flute method is significant as it was the first independent treatise to be known after Hotteterre's Principles of the Flute, Recorder and Oboe, written in 1707. Basic practices are discussed by Corrette, including hand and mouth position, articulation, ornamentation, with physical aspects of the transverse flute examined in a separate chapter.

Corrette writes of his flute treatise as a "useful and curious work which guides in very little time to the perfect knowledge of music and playing sonatas and concertos at sight."[5] In the preface to his flute tutor, he remarks confidently of his following instructions:

> The method embodies not only the true manner to learn the first elements of the transverse flute, but also several notes and ornaments of which earlier methods have not spoken, and at the same time most of the notes and ornaments of these methods teach bad fingerings which hinder true playing.

> I therefore thought to please the public in sharing the discoveries that the great masters have made on this fine instrument. At the same time, I assure those that learn by this method that they will never be wrong in making accurate notes, trills, softenings, beats, and all the ornaments of the most clarity with accurate rules for making them when they are not marked in the music . . . .[6]

V. JOHANN JOACHIM QUANTZ'S LIFE

Johann Joachim Quantz was born on January 30, 1697 in the village of Oberscheden in Hanover. His early musical interest was opposed by his father, a blacksmith, who insisted that Quantz work in the family trade at age nine. Upon his father's death in the following year, Quantz escaped his career as a blacksmith, and was taken in and trained musically by his uncle. Although this uncle also died a few months after his nephew's arrival, Quantz continued his musical studies under Johann Adolf Fleischhack. During this time, Quantz studied the violin, oboe, trumpet, cornet, trombone, horn, recorder, bassoon, and various other instruments, as well as composition.

In his later teenage years, Quantz performed as a village musician in the Dresden town band (1714). From this time until 1741, Dresden remained the center of Quantz's activities, even though he travelled widely. It was during this era that he turned his attention toward the transverse flute since Dresden was in need of a proficient flutist. Quantz's only formal instruction on the instrument came from the renowned French flutist, Buffardin, with whom he studied for four months.

In 1724, Quantz travelled to Italy for a period of study, then on to France and England, returning to Dresden in 1727. While still based in Dresden, Quantz began regular journeys to Prussia, in 1728, to teach flute to the sixteen-year-old Crown Prince Frederick, later known as Frederick the Great. After Frederick became King in 1740, Quantz entered His Majesty's full-

time service as flute teacher, composer, performer, and flute manufacturer. He was given an influential position at Frederick's court and was paid extremely well. Quantz remained in the king's service until his death on July 12, 1773.

Quantz's total compositional output for flute includes one hundred fifty-three sonatas, two hundred ninety-six concertos, and numerous flute duets and trios. Some of these original manuscripts were destroyed during World War II, but many are preserved in Berlin and Marburg.

VI. QUANTZ'S ON PLAYING THE FLUTE

Originally titled Essay of a Method for Playing the Transverse Flute, Quantz's flute treatise of 1752 is commonly known in its English translation as On Playing the Flute. This treatise has long been recognized as a major source of information about eighteenth-century musical practice, due to its wide range of topics and great detail. "Quantz was an exceptional teacher, and his treatise was conceived as far more than an introduction to flute playing. In his Essay he offers his readers a comprehensive programme of studies for the performing musician."[7]

The only significant tutors for the transverse flute before Quantz's work were those of Jacques Hotteterre (Principles of the Flute, Recorder and Oboe - 1707), and that of Michel Corrette (Method for Easily Learning to Play on the Transverse Flute - 1741). "The general areas discussed in Quantz's first ten chapters may have been suggested in parts by these works, but his treatment goes far beyond them in every respect, and differs from them in many particulars."[8]

Quantz's treatise is divided into three parts. The first is devoted to the education of the solo musician, the second to accompanying, and the third to

forms and styles. Although the first of the three main divisions was conceived specifically for the flute, much of the material thereafter is applicable to other instruments and singing. Due to the comprehensive scope of Quantz's treatise, with its three hundred thirty-four pages, this thesis will examine the first of these parts exclusively.

VII. THEOBALD BOEHM'S LIFE

Theobald Boehm of Munich, 1794-1881, was a renowned Royal Bavarian Court Musician and the inventor of the modern flute. The son of a goldsmith, Boehm was trained in this field by his father, excelling at his work. Boehm began playing the flute as a small boy, later constructing his first instrument in 1810. Throughout his teens, Boehm perfected his flute playing, working as an orchestral and court flutist in Munich. Finally in 1818, he relinquished his career as a goldsmith and devoted his life solely to the flute.

Boehm was frustrated with the imperfections of the flute and so began constructing his own, opening a flute-making factory in 1828. He invented an improved mechanism for the flute, known as the Boehm System, which was applied to other instruments, including the clarinet.

> In the Boehm system, an elaborate mechanism allows the holes to be pierced in the correct positions and at the same time to be easily controlled by the fingers. The effect of this was to facilitate accurate intonation and also the playing of passages in keys that were formerly difficult.[9]

As a flutist, Boehm toured widely, presenting numerous concerts throughout Europe. He also was a competent composer and arranger for his instrument, having written seventy-two flute pieces. Overall, Boehm was unparalleled in his talents: "Theobald Boehm had a unique combination of

skills. He was a master flutist, a master gold and silversmith, and a keen student of physics and acoustics as they apply to the flute."[10]

VIII. BOEHM'S THE FLUTE AND FLUTE PLAYING

Boehm's flute inventions and instructions for playing the instrument were described in his flute treatise, The Flute and Flute Playing, first published in Munich in 1871. Boehm summed up his treatise "as complete a description as is possible of my flutes and instructions for handling them, and which also contains instructions upon the art of playing the flute with a pure tone and a good style."[11] The first English edition of the treatise appeared in November, 1908.

For purposes of this thesis, Boehm's flute innovations will be discussed briefly in Chapter IV, with study of his flute instructions in subsequent chapters. Emphasis will be placed on care of the flute, embouchure, tone development, practicing methods, musical interpretation, articulation, and ornamentation.

FOOTNOTES

[1]Leonardo DeLorenzo, My Complete Story of the Flute (New York: The Citadel Press, Inc., 1951), p. 66.

[2]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. xi.

[3]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 200.

[4]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 14.

[5]Ibid., p. 16.

[6]Ibid., p. 17.

[7]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. ix.

[8]Ibid., p. xxix.

[9]J. A. Westrup and F. L. Harrison, The New College Encyclopedia of Music (New York: W. W. Norton and Co., 1976), p. 77.

[10]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. v.

[11]Ibid., p. xxiii.

CHAPTER III

THE EIGHTEENTH-CENTURY GERMAN FLUTE AND ITS EVOLUTION TO BOEHM'S NINETEENTH-CENTURY DEVELOPMENTS

The mechanical developments of the flute through the eighteenth and nineteenth centuries directly affected the music and performance practices of those years. The physical characteristics of the instrument dictated the technical content and stylistic features of the music. For these reasons, the astute contemporary flutist must examine the instrument's history and evolution, thereby gaining insight into performance methods.

The history of the flute in the 1700-1800's divides itself into two distinct, though chronologically overlapping phases. The first phase is that of the German flute from the eighteenth through the mid-nineteenth century. The flute developments of Theobald Boehm, beginning in the 1820's and on through the century, comprise the second phase.

I. THE GERMAN FLUTE

In his flute treatise, On playing the Flute, J. J. Quantz stated the reason why the baroque flute was known as the German flute.

> It is beyond all doubt that in Occidental lands the Germans were the first to revive, if not to establish, the basic principles of the transverse flute as well as of many other wind instruments. Thus the English call the instrument the German flute, and the French designate it "*la flute allemande.*" [1]

The German flute was most commonly made of wood. Boxwood and ebony were popular woods for flutes as well as plumwood, grenadilla, and

maplewood. Quantz expressed his preference in this statement:

> Boxwood is the most common and durable wood for flutes. Ebony, however, produces the clearest and most beautiful tone . . . Anyone who wishes to make the tone of the flute shrill, rude, and disagreeable can have it cased with brass, as some have tried.[2]

Much attention was given to trim and decoration on the eighteenth-century flute. Many were trimmed with gold, silver, brass or ivory, inset with jewels and/or ornately carved. Occasionally, ivory was used for the whole flute, but more frequently, this material was used as decoration on ebony flutes. The single key on the German flute was fashioned out of silver or brass.

Being made of wood, the German flute was greatly affected by temperature changes and moisture. These flutes split and cracked easily even with careful handling and moderate climate fluctuations.

The D#/E♭ Key

The German flute was often referred to as the "one-keyed flute." The French were the first to add the D#/E♭ key, played with the right hand little finger. The precise date of this key addition is unknown, but is speculated by scholars as the late 1600's. (See PLATE I.)

> Jacques Hotteterre le Romain, a member of a distinguished family of French instrument makers, was the principal figure in the redesign of the baroque flute. His major contribution was the addition of the D# key.[3]

The addition of the D#/E♭ key did much for popularizing the German flute as it extended the range upward and made it possible to play chromatically in any key. "The recorder, which was still in use, could not boast of such assets. The one-keyed flute, although faulty, also had better tone quality and intonation."[4]

PLATE I

THE ONE-KEYED FLUTE

Source: Nancy Toff, The Flute Book, (New York: Charles Scribner's Sons, 1985), p. 44.

Range of the German Flute

The compass of Hotteterre's one-keyed flute was "two octaves and some notes," d^1 to d^3 plus "forced notes" that took the compass up to $g^{3.5}$ His fingering chart noted, however, that "the notes above e^3 are forced notes and cannot enter naturally in any piece. . . . These notes are produced by blowing very hard and are greatly out of tune."[6]

In their flute treatises, both Corrette and Quantz documented the range of the flute in their fingering charts as being d^1 to a^{111}. Corrette even suggested playing a low $c\#^1$ by fingering low d^1 and rolling the flute in, thus flattening the pitch to produce low $c\#^{1.7}$

Today's modern Boehm style flute has the range c^1 to d^4, raising the tessitura over an octave since Hotteterre's time.

Corps de Réchange

At the time of the transverse flute's introduction in France, the instrument was constructed in three sections, with all six finger holes bored into the center piece. To compensate for major differences in pitch standards between various cities and provinces, a new constructive technique in flute manufacturing was devised in 1720. This solution, named "*Corps de Réchange,*" divided the flute into four joints: upper, upper-middle, lower-middle, and lower foot joint; the former body joint was subdivided between finger holes for the left and right hands. Each instrument was provided with a set of alternative upper middle joints for lengthening and shortening the flute, and lowering or raising the pitch respectively. These joints came in three to six lengths, to be chosen on the basis of prevailing pitch. At first, the flute was built with only two interchangeable middle pieces, differing from each other by approximately a semitone. Quantz later reported that, "Six middle pieces now

form an interval a little larger than a major semitone, which the construction of the flute permits with no detriment to true intonation; and if it is necessary, two more middle pieces can be added."[8]

Corrette made his own witty but caustic remarks about *Corps de Réchange* and the temperamental nature associated with singers of his day. Even though intonation was improved by the *Corps de Réchange,*

> Such variations in pitch were hardly corrected before some singer capriciously gave himself and air or the singers had colds. Nonetheless, the body replacements were very useful.[9]

This method of *Corps de Réchange* could not have been satisfactory according to modern day scholars. They conclude that inserting a piece of one length, while correcting certain notes, only serves to make others out of tune.[10]

Cork Adjustment

The head joint of the eighteenth century flute was stopped at its upper end by a cork plug, which could be pushed or pulled by the performer to adjust the instrument's intonation. To facilitate this operation, the cork was extended by a screw threaded through the cap on the upper end of the head joint. This cork adjustment in addition to the *Corps de Réchange* still proved insufficient to compensate for major differences in pitch standards. Quantz observed that "the pitch to which we tune is so varied that a different tuning or prevailing pitch has been introduced not only in every country, but in almost every province and city."[11]

Bore of the Flute

Besides his addition of the D# key, Hotteterre also changed the bore of the flute from cylindrical to conical. This alteration was performed to eliminate the shrillness common to earlier instruments. The new shape was actually a

combination of a cylindrical and conical bore, the head joint remaining cylindrical while the rest of the tube tapered toward the foot joint. Due to he flattening effect of the conical bore, the finger holes could now be placed closer together, making fingering more natural.

II. PRE-BOEHM IMPROVEMENTS OF THE GERMAN FLUTE

Despite its poor intonation, the flute enjoyed great popularity in the eighteenth century. More technically demanding music was being written for the flute which made its defects obvious, mainly poor intonation and uneven scale. Alessandro Scarlatti reportedly said, "I cannot endure wind-instrument players; they all blow out of tune."[12]

Just prior to 1760, three London flute makers, Pietro Florio (1730-95), Caleb Gedney (1754-96), and Richard Potter (1728-1806), began adding three additional keys, G#, B♭, and F, to the existing one-keyed flute. Besides making F[3] more reliable, these additions greatly reduced the number of cross fingerings required in playing, This gave composers more freedom in writing for the flute, with greater opportunities for harmonic modulation. At first, many flute players rejected the need for new keys, being skeptical of the mechanical reliability, and objecting to the change of fingering. Gradually public acceptance of these new keys grew and by 1785, the four-keyed flute had become the instrument of choice.

In 1774, Florio, Gedney, and Potter created the C foot joint. By lengthening the flute two inches and boring two new holes in the foot joint operated by open keys, these flute makers extended the lower range of the flute by two notes.

The extension of range and technical facility found with the four- and six-keyed flutes led to their popularity with composers. "Haydn's use of the flute reflects the transition occurring in orchestral sound during the second half of the eighteenth century. In his early symphonies the flute is rarely present; it began to appear regularly only after 1780."[13]

The eighteenth-century flute improvements culminated with the development of the eight-keyed flute. (See PLATE II.) The first of these two keys was promoted by Dr. J. H. Ribock in 1782. His invention called for a closed key for C natural to control a hole bored on the tube between the B and C sharp holes. This was operated with the first finger of the right hand by pressing a finger plate connected to the key with a long shank. In 1786, Johann George Tromlitz introduced a duplicate F natural key operated by the left hand ring finger. This eliminated the right hand use of the awkward and difficult F natural fingering.

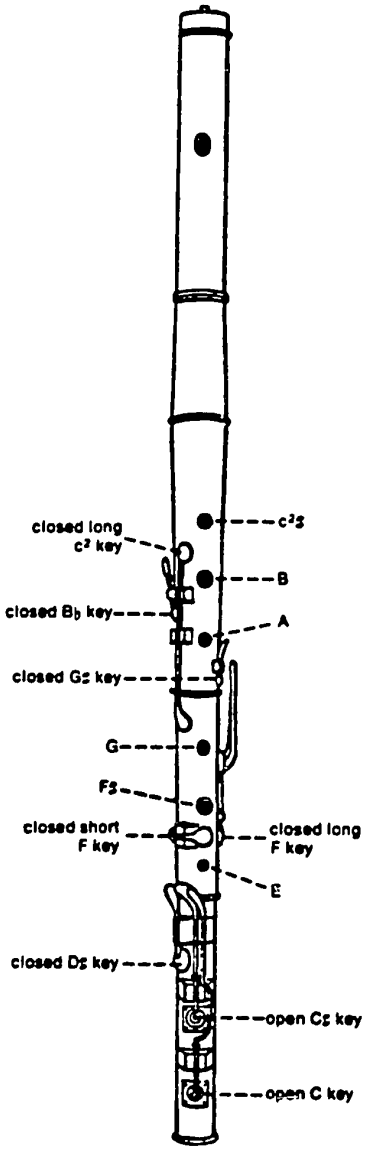
Though the eight-keyed flute is generally considered to be the standard instrument of the late eighteenth and nineteenth centuries, the flute was far from standardized. The one-keyed flute survived well into the nineteenth century, along with the four, six, and eight-keyed models. One reason why the one-keyed flute remained popular was due to its lower cost. At the other extreme, the flute was not limited to eight keys. During the nineteenth century, several flutes were made with as many as seventeen keys, their range extending to low G.

One important development of flute-making in the nineteenth century was brought about by Claude Laurent, a Parisian flute maker. In 1806, he was registered a patent for the use of glass in construction of the flute tube. Although this was not a new idea, the importance lay in the mechanical contrivances that the glass necessitated: silver tenons and sockets for the

PLATE II

THE EIGHT-KEYED FLUTE

Source: Nancy Toff, The Flute Book, (New York: Charles Scribner's Sons, 1985), p. 48.



joints; lengthened springs for increased resilience; and the revolutionary design of the key mountings.[14] Makers of wood flutes soon adopted this idea as it prevented previous troublesome lateral play in the keys.

In 1808, Reverend Frederick Nolan took out a patent for a device designed to improve intonation. This consisted of open-standing keys, closed by pushing down the rings that surrounded the finger holes. This was the first known invention for simultaneously closing both an open key and a regular hole with the same finger, a basic principle to be used later in highly mechanized instruments.

III. GERMAN FLUTE WEAKNESSES

Despite the many mechanical improvements through the first third of the nineteenth century, the German flute was far from perfect. Although the addition of chromatic keys was a marked improvement over the numerous forked fingerings of the one-keyed flute, fingering was not yet optimal. Some forked fingerings still existed, resulting in veiled tone and inferior intonation.

Poor intonation of the German flute was its biggest problem, with octaves extremely difficult to tune. Because of this inadequacy, the flutist was required to roll in or out for each note to achieve accurate intonation. Notes of the third octave were of poor quality and very sharp, while the low notes were flat and dull in tone. Tone holes, unevenly distributed on the German flute, caused not only awkward stretching of the fingers, but also inferior intonation. In reference to the German flute's tone and intonation, Luigi Cherubini remarked, "The only thing worse than one flute is two."[15]

The tone of the German flute was small and pure due to the wooden body and small, round embouchure hole. This grew to be a hindrance as music

for this instrument evolved. "Although the tone of the wooden flute was sweet, it was relatively feeble and not up to the demands of power and brilliance made by its new environment, the modern orchestra."[16] Being made of wood, the German flute had little resonating power, making dynamic changes difficult to execute. The instrument was limited to a dynamic range between mezzo-piano and mezzo-forte.

FOOTNOTES

[1]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 29.

[2]Ibid., p. 34.

[3]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 43.

[4]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 3.

[5]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 11.

[6]Ibid., p. 11.

[7]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New, York: Institute of Medieval Music, Ltd., 1970), p. 62.

[8]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 32.

[9]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 25.

[10]Ibid., p. 3.

[11]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 31.

[12]Richard Shepard Rockstro, A Treatise on the Construction, the History, and the Practice of the Flute, 2nd ed. (London: Musica Rara, 1967), p. 543.

[13]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 25.

[14]Ibid., p. 49.

FOOTNOTES (Cont.)

[15]H. McCaulay Fitzgibbon, The Story of the Flute, 2nd ed., (New York: Charles Scribner's Sons, 1928), p. 135.

[16]Nancy Toff, The Development of the Modern Flute, (New York: Taplinger Pub. Co., 1979), p. 42.

CHAPTER IV

THE FLUTE DEVELOPMENTS OF THEOBALD BOEHM

Theoblad Boehm, flute maker and flute virtuoso, is the one man whom scholars credit as having changed the course of history for the flute with his design techniques. As previously mentioned in Chapter II, Boehm worked upon the flute for several years, experimenting and applying principles of the sciences to his instrument. What follows is a chronological summary of his flute developments, after which will be discussed the mechanics and principles of his flute design.

I. SUMMARY OF BOEHM'S FLUTE DEVELOPMENTS

Theobald Boehm began making flutes as a sideline in the 1820's. In 1828, he opened his own flute-making factory, where he built typical system instruments of the day with modifications to the usual designs. These modifications included tuning slides, hardened gold springs, mounting of keys on screwed-in pillars, and rod-axles to connect the keys.

After hearing the English flute virtuoso, Charles Nicholson, in 1831, Boehm was inspired to make higher standards of performance accessible to players of ordinary ability by making an improved flute. In concert, Nicholson had demonstrated a superior tone of strength and volume due to the enlarged tone holes on his flute. Boehm realized that his own tone was inferior to Nicholson's as he humbly referred to this event: "I could not match Nicholson in power of tone, wherefore, I set to work to remodel my flute. Had I not heard him,

probably the Boehm flute would never have been made."[1] Boehm concluded that the numerous defects inherent in the flute's construction were not easily overcome by the average flutist. Boehm remarked,

> There is no doubt that many artists have carried perfection to its last limits on the old flute, but there are also unavoidable difficulties, originating in the construction of these flutes, which can neither be conquered by talent nor by the most persevering practice.[2]

Boehm deducted that the tone holes of the German flute were not acoustically placed; a total redesign of the fingering system was necessary. In addition, he believed that the tone holes were not large enough for obtaining accurately-tuned high notes and stronger tone.

Boehm's first redesigned flute, built in 1831, incorporated changes in the acoustically correct position of the tone holes. Built in London at the firm of Gerock and Wolf, Boehm's new flute did not succeed, despite publicity from the manufacturer.

In 1832, Boehm introduced yet another new flute to the public at concerts in Munich, Paris, and London. Boehm had enlarged the tone holes as much as was possible and placed them all in their acoustically correct positions. He also incorporated the open-keyed system, which allowed the full venting of holes, using key rings instead of solid covered keys. In addition to basic key and mechanism changes, Boehm also provided trill keys for B to C and C to D trills. At this time, all of Boehm's flutes were made of hardwood, preferably cocus wood or grenadilla wood of South America. Despite its numerous advantages, the 1832 flute was slow to be accepted. By 1833, Boehm had sold only one of his flutes in London, primarily because of the natural reluctance of players to relearn the fingering system.

The efforts of three instrument makers helped Boehm's flute win wider favor. These colleagues made several mechanical changes to the Boehm flute

that made it more practical to build and play, while still preserving the essence of Boehm's invention. The first of these improvements came about by Auguste Buffet, a Parisian instrument maker. He objected to Boehm's placement of axles on both sides of the flute, and decided to move them all to the inner side.[3] Victor Coche, a Parisian flutist, who worked in collaboration with Buffet, suggested other changes to Boehm's flute. Coche reinstated the closed G# mechanism of the older flutes, as he felt that this was easier and less confusing although slightly less perfect acoustically than the open G#. Coche's greatest contribution was the addition of a trill key for C# to D# in the second and third octaves. Vincent Dorus, flute professor at the Paris Conservatoire and solo flutist of the Opera, designed a new type of closed G# key, which offered an even better solution than Coche's. With the help of Dorus' device, many players previously hesitant to try Boehm's flute now took an interest to the instrument.

These modifications made by Buffet, Coche, and Dorus attracted such sufficient attention to the Boehm flute, that by 1838 it was officially introduced to the Paris Conservatoire. Many famous flutists of that time began to adopt the Boehm flute. In 1843, Boehm made official arrangements for his flutes to be manufactured by Rudall and Rose in London and by Clair Godfroy in Paris.

In 1846-1847, Boehm studied classical acoustics with Dr. Carl von Schafhautl at the University of Munich, in preparation for further work on the bore of his flute. As he experimented with his flutes, Boehm concluded that a cylindrical tube was far superior to a conical bore, producing greater harmonics. Furthermore, he believed that the tube should have a parabolic curve toward the embouchure. Boehm constructed his 1847 flute in accordance to these and other principles that will be discussed in the following section.

In 1847, Boehm sold the British rights of his latest model to Rudall and Rose of London, and the French rights to Clair Godfroy and his son-in-law,

Louis Lot of Paris. All of these flutes were made of metal, although Godfroy and Lot made some wooden flutes at the request of Dorus. The French reintroduced perforated keys, opening the centers of A, G, F, E, and D, which allowed increased venting. Today, such models are referred to as the "open-hole" or "French model" flute.

Throughout England and France, the Boehm flute gained popularity. By 1851, the United States had manufactured its first Boehm flute. Boehm's 1847 model flute formed the basis of modern-day flute construction. Though modifications and some improvements have been made since his time, none of these have fundamentally altered the instrument as Boehm had left it. (See PLATE III.)

II. THE MECHANICS AND PRINCIPLES OF BOEHM'S FLUTE DESIGN

Contemporary flutist and author, Robert Dick, maintains that the Boehm system is founded on three basic principles: a cylindrical bore of the flute with parabolic/conical head joint, acoustically positioned tone holes, and mechanical construction enabling the fingers to control all of the holes.[4] Dick's statement reflects only a partial sum of those principles that Boehm considered necessary in flute construction. What follows is a sum of Boehm's flute modifications encompassing each of his basic principles.

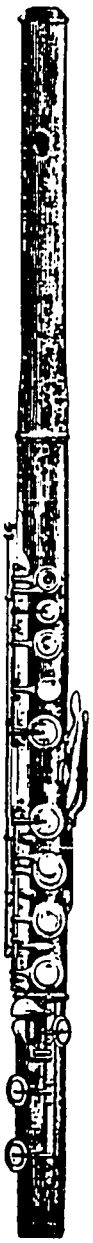
Parabolic Head joint

"Boehm described the curve of the head joint as 'parabolic,' though in fact the curve had only a superficial resemblance, not a mathematical one, to that geometrical figure."[5] Boehm believed that this curved head joint was necessary, having an important effect on tone production and the relative

PLATE III

BOEHM'S 1847 MODEL FLUTE

Source: Andrew Fairley, Flutes, Flautists and Makers, (London: Pan Educational Music, 1982), p. 110.



intonation of the octaves. The actual form of the parabolic head joint is difficult to describe. There is little consistency of measurements between Boehm head joints. Referring to the head joint curvature, Boehm stated that, "The contraction in the bore is undoubtedly determined by experiment, and not by any mathematical calculation bases upon the properties of the parabola."[6] He described this head joint shape by saying, "The curve which at first departs but little from the straight line, bends more and more rapidly as it progresses. Sometimes the portion with the greatest curvature is next to the cork and sometimes next to the tuning slide!"[7] The cylinder flute with the parabolic head joint became the recognized description of Boehm's new instrument, with patents obtained in 1847 for the tube in this form.

Bore of the Flute Tube

The new flute which Boehm introduced in 1847 as the result of his experiments and calculations had a length of six hundred and six millimeters and a diameter in the cylindrical portion of nineteen millimeters. Boehm actually preferred a diameter of twenty millimeters, which he believed had superior volume and richness of tone in the first two octaves. The third octave, however, he found difficult to play softly. To solve this problem, Boehm compromised by making a slightly narrower tube of nineteen millimeters. Boehm discussed this in a letter dated 1867:

> I have made several flutes with a bore of twenty millimeters in diameter, therefore one millimeter wider than usual; the first and second octaves were better, but of course the third octave was not so good. I could still play up to C^6, but from $F\#^5$ upwards, the notes were sounded with difficulty, and if my lip did not happen to be in good order, I could not sound the higher notes piano at all.[8]

Embouchure Shape

Boehm also reconsidered the size and shape of the embouchure hole. He discovered that a larger mouth-hole would produce a louder tone than a smaller one, although requiring greater strength in the muscles of the lip. Boehm concluded that the embouchure hole should be undercut at an angle of seven degrees which made easier tone production. (See Figure I.) Boehm stated,

> In my opinion an angle of seven degrees is best adapted to the entire compass of tones, the walls being 4.2 millimeters thick; and a mouth hole 10 millimeters wide and 12 millimeters long; is best suited to most flute players.[9]

Lastly, Boehm discovered that the ideal shape for the mouth-hole would be a rectangle with rounded corners, contrasting to the traditional oval or round hole. Boehm wrote,

> The opening between the lips through which the stream of air passes is in the form of a slit, and a mouth-hole in a shape like an elongated rectangle with rounded corners presenting a long edge to the wide air stream, will allow more air to be effective than would a round or oval hole of equal size.[10]

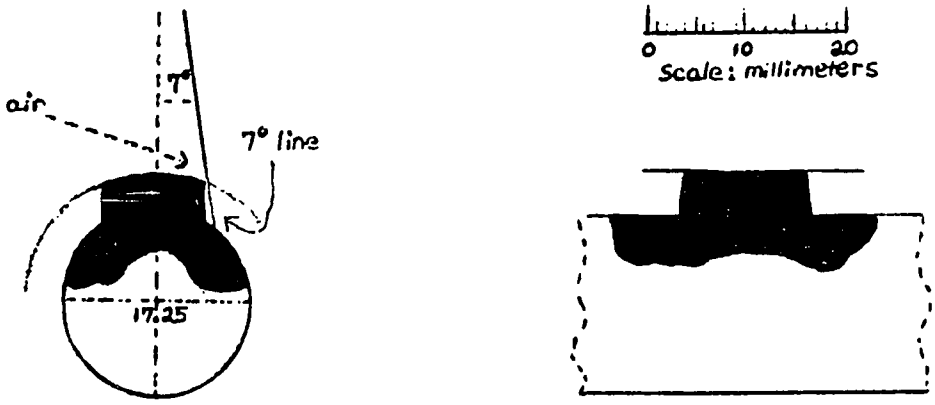


Figure 1

Embouchure of a Boehm Flute
Transverse and Longitudinal
Sections

Tone Holes

Boehm believed that tone holes on the flute should be as large as possible, not less than three-quarters of the bore diameter, which worked out at 14.5 millimeters on his scale. "Free and powerful tones can be obtained only from large holes which are placed as nearly as possible in their acoustically-correct position,"[11] wrote Boehm. In the manufacture of wooden flutes, making holes of the 14.5 millimeters size caused insurmountable difficulties. Consequently, a compromise was adopted with metal flute tone holes at 13.5 millimeters and wooden flute tone holes at 13.0 millimeters. At first, it seemed to Boehm that it would be advantageous to graduate the holes from the lowest to the highest. A few flutes were made on this principle, but, again, manufacturing difficulties increased, practical advantages proved small, and thus the idea was abandoned. Today, some high quality flutes are made with graduated tone holes, not consistently in a series but in groups of two or three sizes. Often the tone holes on the foot joint are slightly larger than the others.

The Schema

In the course of his work, Boehm devised a geometrical diagram which he called his Schema. From this, the necessary constructing dimensions could be read off directly for a flute of the right length to conform to any of the different pitch standards then in use.[12] The relative positions of the tone holes were obtained by calculations based on a simple law of acoustics and documented in this Schema. Boehm described the benefits of his Schema as follows:

> Now these proportions remain constant from the highest to the lowest musical tones and the transition from one interval to the next can therefore be represented graphically, and my Schema has been founded upon these considerations. With its help and without cal-

> calculation, the centers of the tone holes of all wind instruments constructed on my system, as well as the positions of the so-called frets of guitars, mandolins, zithers, etc., may be easily and quickly determined.[13]

The Schema was submitted to the authorities of the Paris Exposition of 1867, but the jury declared themselves as unqualified to decide upon the merits of a production which was scientific rather than artistic. If the Schema had secured the seal of approval, it would have definitely proved useful in the musical instrument industry. The only publicity the Schema received was by the Bavarian Polytechnic Society in their *Kunst und Gewerbeblatt*, a periodical published in Munich, 1868.

System of Fingering

With Boehm's Schema proportions, tone holes were acoustically positioned but consequently out of reach by the fingers. This, along with the enlarged holes, fostered a mechanical problem: how to cover the holes. Boehm solved this by replacing the existing ring keys and open holes with padded keys and adding new mechanism. Each key had to be capable of opening independently, yet be attached to other keys in accordance with his fingering system. Consequently, Boehm adopted the tubes and axles of the French instrument makers. He used the sleeves and rods of Buffet, attaching each key cover to its own sleeve, and opening each one with a light needle spring. Overlapping lugs or pins, called clutches, linked the interconnected keys. Boehm was explicit in his pad construction in order to avoid leakage that had plagued the old German flutes: He specified fine wool disks, covered with a fine membrane or skin of double thickness. The pads were to be covered on the back with sheets of card, with a hole punched in the center, enabling them to be screwed securely into the key cups. A silver washer under the screw head ensured a tight fit.[14]

Material of the Flute

Another crucial feature of the Boehm flute was the choice of materials used for the body. As he experimented with improving the flute, Boehm found that wooden tubes were unstable, replacing these with thin, hand-drawn metal tubes for greater consistency and reliability. He believed that silver and brass tubes produced the most resonant tone. Boehm described the benefits of his metal flutes as follows:

> These metal flutes are not subject to splitting, they cannot vary in the bore, and require neither to be oiled nor to be frequently played, but they always sound equally well. And even temperature affects them less than wooden flutes, because the metal, being an excellent conductor of heat, reaches its highest possible temperature in a few seconds, so that the pitch cannot rise any higher.[15]

The majority of Boehm's metal flutes were made of silver, of which he wrote, "The silver flute is preferable for playing in very large rooms because of its great ability for tone modulation, and for the unsurpassed brilliancy and sonorousness of its tone."[16] On account of its easy tone production, often the silver flute was overblown, causing shrill and hard tone. Many flute players of that day, being accustomed to a wooden instrument, found changing to a silver flute difficult. For this reason, Boehm also produced wooden flutes with his new system. He also frequently combined two materials, making the body of silver and the head of wood. Especially in his later years, Boehm most strongly advocated this combination, constructing such flutes form 1865 and on, throughout his life.

FOOTNOTES

[1]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 8.

[2]Theobald Boehm, An Essay on the Construction of Flutes, ed. W. S. Broadwood (London: Rudall, Carte and Co., 1882), p. 17.

[3]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 53.

[4]Robert Dick, The Other Flute (London: Oxford University Press, 1975), p. 7.

[5]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 55.

[6]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 17.

[7]Ibid., p. 17.

[8]Ibid., p. 19.

[9]Ibid., p. 24.

[10]Ibid., p. 21.

[11]Ibid., p. 26.

[12]Ibid., p. 128.

[13]Ibid., p. 38.

[14]Nancy Toff, The Development of the Modern Flute (New York: Taplinger Pub. Co., 1979), p. 70.

[15]Theobald Boehm, An Essay on the Construction of Flutes, ed. W. S. Broadwood (London: Rudall, Carte and Co., 1882), p. 45.

[16]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications,1964), p. 54.

PART II

FLUTE PLAYING OF THE EIGHTEENTH AND NINETEENTH CENTURIES AND ITS INFLUENCE ON THE PRESENT DAY FLUTIST

CHAPTER V

POSTURE WHILE PLAYING THE FLUTE

Of the four treatises examined in this thesis, three begin with directions on posture, holding the flute and finger position. Hotteterre, Corrette, and Quantz believed that a flutist must adhere to these basic elements of posture from the beginning if succeeding instructions were to be of benefit. Boehm's treatise omits these fundamentals, focusing instead on components of pertinence to the intermediate/advanced flutist.

I. POSTURE ACCORDING TO HOTTETERRE

Hotteterre began his writings on posture by instructing flutists, whether seated or standing, to keep their bodies straight, head turned slightly to the left, and hands high without lifting shoulders or elbows. The left arm, which grasped the flute from underneath, was to be held near the body with the wrist bent in. When standing, Hotteterre preferred that the left foot be placed forward, the body resting on the right hip without strain. Above all, he warned flutists to refrain from making any body or head motions as "some do when beating time."[1] The visual effects of posture were as important to Hotteterre as the music itself. This was reflected in his statement, "When this posture is achieved, it is quite graceful, and will gratify the eye no less than the sound of the instrument will delight the ear."[2]

In his treatise, Hotteterre placed an illustration to demonstrate the position when holding the flute. (See PLATE IV.) From this illustration, flutists

PLATE IV

HOTTETERRE'S ILLUSTRATION OF FLUTE PLAYING POSTURE

Source: Jacques-Martin Hotteterre, Principles of the Flute, Recorder, and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 8.

could actually see the proper body stance from head to hips. With corresponding directions to the lettering on the figure, the student was able to learn left and right hand positions and flute angle. The letter A showed that the left hand was to be placed higher than the right, the flute held between the thumb and first finger. B revealed that the wrist was bent down with the first two fingers slightly curved, the third and fourth fingers extended. With respect to the right hand, letter C demonstrated that the fingers were to be held almost straight, with the wrist bent down slightly, the thumb under the index finger, or a bit lower, and the little finger placed on the flute between the sixth hole and the molding of the key. Although the illustration appeared otherwise, Hotteterre stated that letter D displayed the correct angle to hold the flute, "almost level, slanting only slightly downward."[3] This figure exhibited more than a slight slant; although the flute was parallel with the lips, the instrument was tilted at a near forty-five degree angle.

Finally, Hotteterre made mention that some flute players of his day held their flutes incorrectly on the opposite sides of their bodies. He stated, "There are others who, because of not having had basic instructions, place the left hand below and the right hand above, and hold the flute to the left."[4] Hotteterre did not condemn this position altogether but advised those who had not acquired this habit to beware.

II. POSTURE ACCORDING TO CORRETTE

Corrette's account of flute playing posture closely resembled that of Hotteterre. Like Hotteterre, he also mentioned that the mouthpiece of the flute was to be held higher than the foot joint, turning the head toward the left shoulder, as was customary in that day.

Corrette's directions for hand position were identical to those of Hotteterre and consequently will not be restated in this thesis, with one exception. Corrette noted that the left-hand little finger, not serving any particular function, was to be held in the air. Hotteterre's diagram supported this premise although he made no mention of this in his text.

Corrette commented that none of the fingers of the left and right hands ever changed places; when the holes were uncovered, fingers were held above these holes. He also cautioned flutists not to hold their fingers so high that execution was hindered. Corrette recommended playing the flute in a relaxed manner. He advised students to be careful "not to make grimaces or to have ridiculous posture."[5] In regards to stance, he wrote:

> One can play standing or seated, depending on the occasion, but when one plays the first movement of a solo concerto or sonata, or accompanies a cantata by score, one plays better when standing. The instrument is heard better.[6]

III. POSTURE ACCORDING TO QUANTZ

When comparing the flute treatise of Quantz with those of Hotteterre and Corrette, both similar and contrasting directions for posture are revealed. Basic instructions for placement of hands and fingers remain the same in all three treatises, hence repetition of these is unnecessary. Quantz, however, added some further enlightening comments. He advised each flutist to hold their instrument firmly, pressing the index finger and thumb of the left hand securely against the flute and consequently the mouth. This ensured a steady hold on the flute when executing trills or shakes.

As for the position of the right hand, the teachings of Quantz opposed those of Hotteterre and Corrette. He advocated placing the fingers over the holes in a curved arch position, not flat and straight as suggested in previous

tutors. Quantz did caution flutists not to use the tips of the fingers, "or you will not be able to cover the holes so that no air can escape."[7] This arched finger position served to give greater strength in striking the shakes quickly and evenly.

Like Corrette, Quantz emphasized the importance of not raising the fingers too high, and added that one finger must not lift higher than the others. These incorrect habits made it impossible to execute passage work quickly and distinctly, believed Quantz. Conversely, the fingers were not to be held any closer than the breadth of the little finger so that clarity of tone was not impaired.

Regarding overall body posture, Quantz instructed flutists to hold their heads constantly erect so that breathing was not hindered. Both Hotteterre and Corrette directed students to turn their heads to the left shoulder, with the flute tilted down to the right. These two treatises also advocated keeping the arms close to the body while Quantz made remarks to the contrary:

> You must hold your arms a little outwards and up, the left more than the right, and must not press them against your body, lest you be compelled to hold your head obliquely toward the right side; for this not only produces bad posture, but also impedes your blowing, since the throat is constricted, and respiration is not as easy as it should be.[8]

Finally, Quantz directed flutists to hold their instruments firmly against their mouths, not turning their flutes alternately in and out, which made the pitch either lower or higher, respectively.

IV. INFLUENCES ON THE PRESENT DAY FLUTIST

Although the flute of the eighteenth and nineteenth centuries is very different from that of the twentieth century, the present day performer can learn much from tutors written some two hundred years ago. As in previous eras, posture is still considered the key to correct playing. In her book on flute

playing, The Flute Book, Nancy Toff writes about flute position and posture, stating, "Technique begins with a simple premise: the flute must be positioned so that the appropriate parts of the player's body can control it with maximum efficiency. This concept involves total body posture."[9]

As for basic stance, the feet of modern flutists are to balance the body's weight evenly, approximately eight inches apart and flat on the floor. According to Hotteterre, the left foot was to be placed forward with the body resting on the right hip.

All three treatises mentioned holding the head high so as not to constrict air flow. Although this is still good advice for flutists of today, care should be taken not to turn the head too far to the left as advised by Hotteterre and Corrette. Also, flutists of the present time are taught not to hold the flute at such a low angle, as seen in Hotteterre's diagram. Previously quoted, Quantz preferred a higher flute angle, with the arms held up and further away from the body.

Of the tutors examined, basic hand placement in regards to wrist, thumb, and finger position is parallel to that of the modern day. Of course, the present day instrument has keys over the holes, but directions given by these tutors still hold true today. Both Corrette and Quantz instructed students to keep fingers fairly close to the holes to improve technique, advice that is beneficial to all flutists. Quantz cautioned flutists not to use the tips of fingers in covering the holes, as does Nancy Toff in her book, "The fleshy part of the third joint, not the fingertips, should touch the keys for more secure control, and in the case of open holes, coverage."[10] Flutists of today should keep the fingers of the right hand slightly curved for flexibility, as recommended by Quantz, not flat as suggested by Hotteterre and Corrette.

The statement made by Hotteterre for flutists to avoid excessive body movement when playing, is helpful to flutists of every era. The visual appearance of flutists when performing is just as important today as in the eighteenth century. Corrette summed it up by warning students not to make grimaces while playing or have "ridiculous" posture.

FOOTNOTES

[1]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 9.

[2]Ibid., p. 2.

[3]Ibid., p. 10.

[4]Ibid., p. 12.

[5]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 26.

[6]Ibid., p. 26.

[7]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 37.

[8]Ibid., p. 37.

[9]Nancy Toff, The Flute Book (New York: Scribner's Sons, 1985), p. 124.

[10]Ibid., p. 126.

CHAPTER VI

THE EMBOUCHURE

The development of a proper embouchure or position of the mouth and lips for flute playing has always been an essential topic of flute pedagogy. According to Nancy Toff, contemporary author of The Flute Book:

> The most important determinant of flute tone is the embouchure, or lip formation, because the embouchure influences all four factors of tone production: air jet speed or pressure, air stream size, distance from lip opening to flute edge, and air jet angle.[1]

Although various methods advise that embouchure technique cannot be taught by rules, there are certain guidelines that greatly simplify the learning process.

All four of the flute treatises examined herein contain some degree of information regarding the embouchure. Under this topic of study, Hotteterre and Quantz included a discussion of intonation, with Quantz also emphasizing air speed.

I. THE EMBOUCHURE ACCORDING TO HOTTETERRE

As in his instructions for posture, Hotteterre once again directed the readers of his treatise to observe the position of the lips as illustrated in his previous diagram. (See PLATE III.) He explained that the lips were to be joined, except in the middle where a small opening allowed for the air passage. Hotteterre continued by warning flutists not to bring lips forward, but instead, to draw them back at the corners so that they were smooth and straight.

Because of physical variations between the features of flutists, all

rules for embouchure formation did not pertain to every student. Thus, experimentation played a considerable role in the embouchure development. Hotteterre expressed this in his directions to find the proper position by rolling the flute. "Place the mouthpiece against the little aperture, blow gently, press the flute against the lips and roll it constantly in and out until the true spot is found."[2]

Flutists were advised to use both ears and eyes in their experiments for the proper embouchure. In order to observe all his rules, Hotteterre suggested practicing before a mirror, at first with only the flute head joint. This technique allowed for all concentration to be placed on embouchure formation without involving fingering. Following Hotteterre's method, after acquiring a reasonable tone with the head joint alone, students then added the remaining flute body, placing the fingers over the holes one by one while blowing several times. Practice of this was continued until all notes could be played with assurance.

Although Hotteterre promoted his rules of embouchure development, he did not insist that students follow these if the situation necessitated otherwise. He illustrated this in his quote:

> . . . . . if a person's lips were such that it would be more difficult for him to produce the embouchure by smoothing and straightening them than by extending the upper lip, he must follow my rules only when they do not create an adverse situation, and he must always follow that which seems to be the most natural.[3]

In regards to embouchure manipulation for varying registers, Hotteterre added a few remarks. He pointed out to beginning students that when playing progressively higher pitches, the embouchure became increasingly more difficult. To soften these high sounds and produce them more easily, he suggested that the lips be tightened gradually, stretched at the

corners, with the tongue extended toward the lips to increase the air intensity.

Hotteterre recommended tuning pitches by means of the embouchure. In actuality, it was a movement of the head or hands that rolled the flute in or out in order to lower or raise the pitches, respectively. Hotteterre maintained that this motion was embouchure controlled and so included intonation under this heading. He explained, "The expressions 'roll the flute' and 'roll the mouthpiece' bear the same meaning."[4] Throughout his fingering chart, Hotteterre gave exact instructions on rolling in and out for each pitch. He considered this action a fine point, being difficult to achieve for the beginner. He summed up his beliefs in this statement:

> Any observations I may have made concerning the intonation of the half steps by rolling the flute inward or outward are fine points with which the student should not bother at the beginning, where the groundwork, so to speak, is but roughly laid out. He will, therefore content himself with acquiring facility of embouchure and finger work. After achieving this, he can practice those refinements which are essential for perfection and which may be acquired only in time.[5]

II. THE EMBOUCHURE ACCORDING TO CORRETTE

Michel Corrette began his chapter on embouchure stating that flute embouchure was difficult but made easier with use of his steps. In contrast to Hotteterre, Corrette gave an outline of the procedure to be followed for proper embouchure formation. His first step instructed the student to place the lips on the embouchure hole and join them together with a small opening in the middle for the air passage. The corners of the mouth were to be tightened while the air was pressed out gently.

Step two in Corrette's embouchure instructions was a combination of related ideas. He mentioned that some flutists played best by advancing the lower lip over the flute hole while others did not. "For the rest, one cannot give

any rule which does not have some exception."[6] Like Hotteterre, Corrette believed that students should follow what was most natural for them and what produced the best tone. He stated that for some, the embouchure was formed naturally while others needed practice to acquire the correct mouth position. Overall, Corrette's second step for embouchure development emphasized that, "The principle of the mouth formation is to make the flute ring and have a clear sound."[7]

Step three of Corrette's embouchure instructions had more to do with blowing in the instrument than actual mouth formation. He first directed students to roll the flute in or out to make blowing easier, then went on to discuss air speed for varying octaves:

> One must yet observe the degree at which the notes rise. One must increase the wind, but with imperceptible graduation for the first octave. . . But to make the higher notes, one must give a little more air, always saving it, not making it so loud that the tone shakes.[8]

Although the previous quote concluded Corrette's chapter on embouchure, he did make a final comment about the lips in his fingering chart. In addition to blowing stronger for high notes, he also directed students to tighten their lips, especially for the third octave.

III. THE EMBOUCHURE ACCORDING TO QUANTZ

Whereas the embouchure instructions of Hotteterre and Corrette are but a few paragraphs in length, this same topic was given a full ten pages in Quantz's treatise. This detailed account began with a list of physical features affecting the tone of the flute. "The diverse attitudes of the various parts of the mouth, such as the palate, the uvula, the cheeks, the teeth, the lips, and of the nose as well, cause the tone to be produced in diverse ways, either well or poorly."[9] Quantz added that if the tongue were up too high against the palate,

or the teeth clamped together so that the mouth was not sufficiently open, then tone was obstructed.

Before examining the embouchure, Quantz digressed by discussing the instrument's tone quality and outside factors affecting tone. Gradually he eased into specific instructions for the embouchure with some preliminary statements. As with the treatises of Hotteterre and Corrette, Quantz explained that it was difficult to give precise rules for a good embouchure. He mentioned that for some students a proper embouchure was easy while for others almost impossible, as much depended upon the natural constitution and disposition of the lips and teeth.

Quantz gave definite rules for embouchure formation. First, he instructed students to place the flute to the mouth and contract the cheeks so that the lips became smooth. Next, the upper lip was to be positioned above the mouth hole on the rim. The lower lip was then pressed to the upper lip and drawn down until the inner rim of the mouth hole was in the middle of the lower lip. After this, the flute was to be rolled out with the lower lip covering half of the embouchure hole. Finally, flutists were instructed to blow into the instrument, directing half of the air into the hole and half over the hole. The farthest edge of the embouchure hole was to divide the column of air.

In addition to these rules, Quantz warned that pressing the teeth and lips together too tightly resulted in a hissing tone, while opening the mouth and throat too widely produced a dull tone.

Quantz strongly advocated the use of lip and chin movement. He instructed students to move their chins and lips constantly backwards or forwards in accordance with the proportions of the ascending and descending notes. For full low register tone, the lips were to be drawn back with the lip opening slightly longer and wider. The chin and lips were to be pushed forward

for the upper register so that the lip opening became small and narrow. Again, Quantz cautioned against pushing lips together too tightly, resulting in a hissing tone.

To illustrate the degree of lip and chin movement for each octave. Quantz used a drawing of the flute embouchure hole divided by four horizontal lines. (See Figure 2.)

4 times
actual size

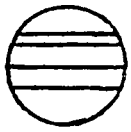


Figure 2

Quantz's Embouchure Hole and
Coverage Levels for Lip

The second line from the bottom indicated the amount of hole to be covered with the lips for the middle octave note, D^{11}. The lowest line represented the distance that the lips were to be drawn back for the note, low D^{1}. The third line up indicated the degree that the lips were to be pushed forward for the note, high D^{111}; with the fourth line, only half as far away, demonstrating how much further the lips were to be pushed forward for high G^{111}. In a final comment describing his diagram, Quantz stated that the opening of the mouth hole was never any larger than the space between the fourth line and the rim of the circle.

Quantz denounced increasing the air speed to produce higher notes, stating that "on no account must the wind be increased or doubled."[10] Quantz deduced that while low notes were to be played strongly, the upper ones were

to be played weakly in order to avoid a coarse tone. He argued that some flutists of the day found it necessary to increase their air speed due to incorrect embouchure hole coverage. According to Quantz, these flutists knew nothing of lip and chin movement, but instead, relied on air velocity to acquire various octaves.

Quantz continued his discussion of lip and chin movement throughout his entire chapter. He further clarified this action in his statement:

> The lips must move gradually for notes which ascend or descend by step, while in leaps they must vary their movements in accordance with the size of the leaps if the appointed place on the mouth hole is always to be hit with certainty. Note especially that the notes in the low octave must be played more strongly than those in the high octave.[11]

As for tuning, Quantz advocated not only rolling the flute in and out, as did previous pedagogues, but also moving the lips. To sharpen a note, the student was to roll the flute out and pull the lips back. The opposite was true when one desired to lower a pitch; the lips were to be pushed forward while the flute was rolled in.

Quantz concluded his discussion of the embouchure with some additional comments on tuning. He noted that if a flutist wished to play more softly, the mouth hole was to be covered more with the lips than previously suggested. Since this made the pitch flatter, Quantz recommended pressing in the cork plug of the head joint. This made the flute air column shorter and thus raised the pitch.

IV. THE EMBOUCHURE ACCORDING TO BOEHM

Although the three previous tutors of Hotteterre, Corrette, and Quantz gave instructions on the formation of a good embouchure, the tutor of Boehm

did not. Instead, he presented exercises to develop embouchure control, assuming the student had previous knowledge on the basics of embouchure formation.

At the beginning of his chapter on embouchure, Boehm briefly discussed air direction. He believed that pure flute tone depended upon the direction in which the air stream was blown against the edge of the mouth hole, controlled by the embouchure. He remarked:

> Each octave therefore requires a different direction of the air stream, and when the correct one is found, not merely will a fine quality of tone be brought out, but by increasing the force of the air blast, the tone may be brought to the greatest possible strength without any deterioration in quality or pitch.[12]

In contrast to Quantz, Boehm advocated an increase in air speed for obtaining octaves and quality tone. He stated, "The notes of the second octave are produced by overblowing the tones of the first, by narrowing the opening in the lips, and by changing the angle and increasing the speed of the stream of air."[13]

Boehm, however, cautioned against overblowing and forcing the air which resulted in cracked octaves. This not only wasted air but caused impure tone.

Boehm believed that a good embouchure depended mainly upon the normal formation of the lips and teeth but was not impossible for those with defects in this area. As an aid for all students, Boehm wrote an exercise to strengthen the development of the embouchure. (See Figure 3, p. 52.) Beginning with the middle register note, C, Boehm instructed students to start blowing pianissimo, swell to a forte, then bring the volume back again to a faint pianissimo. Next, flutists were to crescendo from the same note, C, with a clear tone, then move to the note, B, and decrescendo without any alteration of the

embouchure. The note, B, was to continue unaltered with the quality and purity of the preceding note. After this, students were to play B alone with a crescendo and a diminuendo, the proceed to $B^{\flat}$ in the same manner as before. This pattern was to be continued down to the lowest pitches and up to the highest, with the least possible alteration of the embouchure.

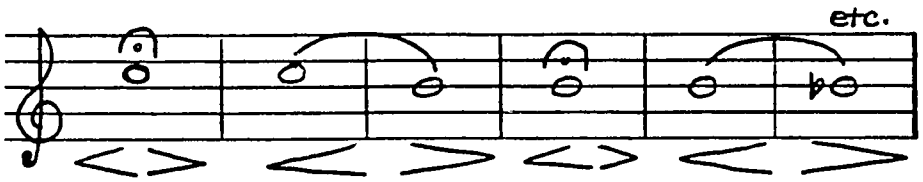


Figure 3

Boehm's Exercise for Strengthening
the Embouchure

After practicing this exercise, Boehm advised students to practice all major and minor scales; then intervals of thirds, fourths, fifths, sixths, sevenths and octaves. His theory was that with consistent practice of these, the embouchure would become accustomed to making skips in intervals of any kind.

V. INFLUENCES ON THE PRESENT DAY FLUTIST

Each of the four flute treatises examined offers a degree of advice for the modern flutist. Although methods of embouchure formation, air usage and other factors differ between these historical tutors, the contemporary flutist can benefit by considering these practices, applying them to his/her own

performance.

All four of the treatises studied agree that lip movement was necessary to obtain varying pitches. Hotteterre and Corrette recommended tightening and stretching the lips to produce high pitches more easily. Quantz thoroughly analyzed the movement of the lips and chin in proportion to the rise and fall of pitches. He suggested a forward lip movement for higher notes, whereas Hotteterre and Corrette recommended pulling back, stretching and tightening the lips for the upper octaves. Boehm did not state whether the lips were to be pulled back or pushed forward for any octave; his only mention of movement was to make the lip opening narrow for upper octaves.

The lip and chin movement of Quantz is a technique used by a number of modern day flutists. Nancy Toff agrees in her statement, "Higher notes demand a smaller lip-to-edge distance than do low notes."[14] This refers to the far edge of the flute hole not covered by the lips. Low notes require a more open and uncovered hole than do higher notes, according to Toff. The lips are back for low notes, allowing more air into the flute, while pushed forward, with the air stream directed higher for upper octaves.

On the subject of Quantz's chin movement instructions, modern day flutists are divided. "The Taffanel-Gaubert method, for instance, states firmly that the air stream should be controlled only by the lips, while Marcel Moyse's book on tone, *De La Sonorité*, advocates the combined use of air and lips."[15] Since Taffanel, Gaubert, and Moyse are among the foremost flutists and teachers of this century, how does one choose the proper method? The solution should be to try all the techniques and adopt that which works best for the individual.

A topic of controversy between the four treatises is that of air speed. Hotteterre mentioned this subject only once when giving instructions for the

upper octaves. He suggested that the tongue be extended toward the lips while blowing to increase the air intensity. Corrette gave slightly more detailed instructions on this matter while still giving concise comments. He directed students to gradually increase their air speed as the notes rose higher, cautioning against overblowing. As previously stated, Quantz was emphatic in his beliefs that air speed should not be increased on any account. He preferred that low notes be played stronger than high notes, and the upper octaves played weakly to avoid coarse tone. With his method, all register changes were brought about through lip and chin movement only. In agreement with Hotteterre and Corrette, Boehm promoted increasing the air for upper octaves, but also stressed changing the air angle for differing registers.

As with the differing opinions of the historical treatises, modern flute methods do not all agree that air must be increased for upper octaves. In his book, Flute Technique, F. B. Chapman says that "by altering the amount of opening between the lips, the rapidity of the air stream is regulated."[16] Consequently, the smaller the opening, the more rapid will be the air stream resulting in a higher pitch. Chapman determines that more air is not needed for a higher pitch, just a smaller lip opening. Nancy Toff agrees, "the smaller the opening between the lips, the greater the speed or force of the air stream. The greater the air speed, in turn, the higher the pitch."[17] Other flute methods use a combined method of lip movement and increased air. An example of this can be found in The Art of Flute Playing, by Edwin Putnik, in which he recommends the increase of breath support and air speed when ascending to the upper octaves. He combines this with lip movement to produce higher pitches. "The lips act like a nozzle on a hose in increasing the intensity of the air column."[18]

Both subjects of lip movement and air velocity are of crucial importance to students of the flute. Although not always in complete agreement,

these historical treatises offer advice on embouchure and air speed, forming a basis for modern day methods. Each student must explore all alternatives and choose those that work best for his own flute playing.

Tuning pitches through the rolling in and out of the flute was a popular practice suggested by Hotteterre and Quantz. Quantz combined this rolling motion with lip movement to further refine intonation discrepancies. In modern flute methods, rolling the flute is usually denounced, although movement of the lips is imperative. Putnik says, "Minor variations in tuning are accomplished by the use of the lips, not by rolling the flute in or out."[19] Nancy Toff advocates a rolling motion along with lip movement and additional actions:

> To lower the pitch, drop the lower jaw and lower the head, roll the flute inward, pull the corners of the mouth back slightly, cover the embouchure hole with the lower lip, and pull the upper lip down to direct the air stream lower into the flute. . . . To raise the pitch, do exactly the opposite.[20]

All in all, the flute treatises of the eighteenth and nineteenth centuries offer much advice in embouchure formation and control. Boehm's long tone exercises can be of benefit to the modern flutist in embouchure development. Hotteterre's suggestion to use the mirror in embouchure practice is helpful advice for students of all eras. The contrasting instructions given by the treatises for lip movement and air velocity must be examined and tested by serious students in their search for successful embouchure development.

FOOTNOTES

[1]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 92.

[2]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 11.

[3]Ibid., p. 12.

[4]Ibid., p. 27.

[5]Ibid., p. 29.

[6]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 26.

[7]Ibid., p. 26.

[8]Ibid., p. 27.

[9]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 49.

[10]Ibid., p. 54.

[11]Ibid., p. 57.

[12]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 17.

[13]Ibid., p. 29.

[14]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 93.

[15]Ibid., p. 91.

[16]F. B. Chapman, Flute Technique, 4th ed. (New York: Oxford University Press, 1973), p. 6.

FOOTNOTES (Cont.)

[17]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 93.

[18]Edwin Putnik, The Art of Flute Playing (Illinois: Summy-Birchard Company, 1970), p. 32.

[19]Ibid., p. 11.

[20]Nancy Toff, The Flute Book (New York: Charles Scribner's Sons, 1985), p. 99.

CHAPTER VII

ARTICULATION

The various methods of articulation as recommended by the writers of the eighteenth and nineteenth flute treatises, make an important and interesting study. Many of the techniques once used, although nonexistent today, serve as forerunners for modern articulation methods. Each of the four treatises examined offered information in this area; some briefly explained these practices while others delved into analysis.

I. ARTICULATION ACCORDING TO HOTTETERRE

In his flute treatise, Hotteterre grouped articulation and ornamentation into one chapter. As with ornamentation, articulation added variety and character to the music. Hotteterre remarked, "To make playing more pleasant, and to avoid too much uniformity in tonguing, articulation is varied in several ways."[1] Two main tongue strokes were used by Hotteterre: "tu" and "ru." The "tu" was the most common syllable being used on whole notes, half notes, quarter notes, and most eighth notes. When eighth notes skipped or were repeated on the same pitch, they were tongued with "tu;" when they ascended or descended in a stepwise fashion, "tu" was alternated with "ru."

The articulation "tu-ru" was governed by the number of eighth notes. When the number was odd, "tu-ru" was used immediately. (See Figure 4, p.59.)

When the number of eighth notes was even, the flutist was to use "tu" on the first two notes and then "ru" alternately, as in Figure 5. (See p. 59.)

Figure 4

Hotteterre's Use of the Articulation "Tu-Ru"
for an Odd Number of Notes

Figure 5

Hotteterre's Use of the Articulation "Tu-Ru"
for an Even Number of Notes

The practice of playing notes unequal in rhythm, called dotting, was used in conjunction with the "tu-ru" tonguing. Hotteterre explained how to execute this technique:

> This usage is governed by number. When it is even, the first is long and the second is short, and so on for the others. When it is odd, the opposite is done. . . . The times in which this method is ordinarily used are two-four, simple three and six-four.[2]

"Ru" was used on the note following the eighth note when it ascended or descended in stepwise fashion, as seen in Figure 6, p. 60.

Figure 6

Hotteterre's Use of the Articulation "Ru"
Following an Eighth Note

In time signatures of six-eight, twelve-eight and nine-eight, the eighth notes were conceived as quarter notes and the sixteenth notes as eighth notes. Hotteterre's rules for these values were the same as previously stated for quarter and eighth notes, respectively. The eighth notes were to be played evenly, all with the articulation "tu," while the sixteenths received "ru."

Hotteterre commented that "tu-ru" was utilized to achieve more softness in the music, as a matter of taste. The syllable "ru" was not to be used on trills or two consecutive notes, but always alternated with "tu."

Hotteterre was succinct in his mention of slurs, explaining that these "consist of two or more notes played on one stroke of the tongue, and are indicated above or below the notes by ties."[3]

II. ARTICULATION ACCORDING TO CORRETTE

Corrette began his brief discussion of articulation by condemning the use of "tu-ru." He declared that in former times these syllables were used in tonguing, but that virtuosos of his day regarded these as "being absurd, only serving to hinder the student."[4] Unfortunately, Corrette did not give a

replacement for the obsolete "tu-ru," although scholars surmise that the syllables "too-tle" succeeded the former.[5]

Corrette explained that the action of tonguing was nothing more than small attacks by the tongue behind the lip opening. He compared the tongue attacks made on the flute to bow strokes made on the violin.

With regard to slurring, Corrette mentioned that a slur under or over two or more notes indicated that they were to be played with the same attack of the tongue. For passages with both slurs and dots or small lines over the notes, the flutist was to make several tongue attacks without taking another breath, as seen in Figure 7.

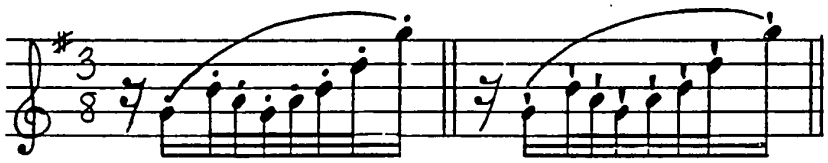


Figure 7

Corrette's Articulation for Notes
with Slurs and Dots/Lines

III. ARTICULATION ACCORDING TO QUANTZ

As in the preceding chapter on embouchure, Quantz once again presented detailed information for aspiring flutists, now on the subject of articulation. Like Corrette, he compared tonguing on the flute to bow strokes on the violin. Quantz stated that the liveliness in executing music depended more on the tongue than the fingers, animating the expression in pieces of every sort.

Quantz determined that there were three kinds of tonguing syllables: the first was "ti" or "di;" the second, "tiri;" and the third, "did'll," often called double tongue. Each of these was explained in its own detailed section.

Use of the Syllable "Ti" or "Di"

According to Quantz, the syllable "ti" was used for short, equal, lively, and quick notes. "Di," on the contrary, was to be used when the melody was slow and/or sustained, as in an Adagio.

To produce the syllable "ti," Quantz instructed the flutist to press both sides of the tongue firmly against the palate, curve the tip up and place it in front near the teeth, so that the air flow was stopped. When a note was to be played, only the tip of the tongue was drawn down from the palate; the rear part of the tongue remained in place. Quantz said, "The impact of the stopped wind is the result of this withdrawal, rather than of the stroke of the tongue itself, as many mistakenly believe."[6] Quantz further warned students not to tongue on the lips for low notes or make excessive forward and backward tongue movements, which prevented full tone and impeded quickness.

Believing that tongue placement varied for different octaves, Quantz directed students to place the tongue a thumb's breadth back from the teeth for low notes, bringing it gradually forward when ascending to higher pitches. On very high notes, the tongue was no longer to be curved but instead straight, placed between the teeth.

To make notes short, Quantz advised students to use the articulation, "ti," the tongue springing back immediately to the palate to stop the air. In sustained passages, the syllable "di" was used; the tongue remained free in the middle of the mouth, enabling air to pass for continued tone.

In lively pieces, Quantz recommended using the syllable "ti" for the fast notes where intervals leaped, with "di" used for notes of any value which ascended or descended by step. (See Figure 8.)

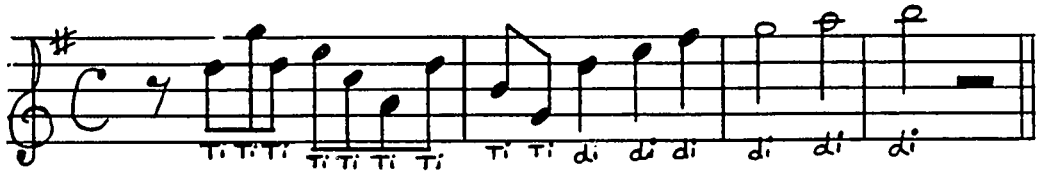


Figure 8

Quantz's Articulation Use of "Ti" and "Di"
According to Intervals

Only if dots or strokes were placed above the stepwise notes, was the syllable "ti" employed.

For appoggiaturas, Quantz said to tip these with the same kind of tongue stroke as the preceding note. The air was to be stopped before the appoggiatura, making it more distinct.

For slurred notes, the syllable "di" was preferred by Quantz, tonguing only the note on which the slur began. If slurs were combined in a passage with staccatos, all notes not slurred received "ti."

For repeated notes, Quantz directed students to "articulate from the chest"[7] the slurred notes with dots. (See Figure 9, p. 64.)

In his final comments for single tongue, Quantz emphasized the need for stronger tonguing in large halls:

> In a large place which reverberates, and where the listeners are at a great distance, you must, in general, mark the notes with

the tongue with greater force and sharpness than in a small place, especially if several notes appear on the same pitch, otherwise they will sound as if they are produced only by exhalation from the chest.[8]

Figure 9

Quantz's Articulation for Repeated
Slurred Notes with Dots

Use of the Syllable "Tiri"

The second type of tongue stroke described by Quantz was "tiri." This was used most often in moderate quick passages and was essential for dotted notes. Quantz believed that this articulation expressed uneven rhythm in a much sharper and animated style than was possible with any other tonguing.

With "ti" pronounced as explained in the previous section, "ri" was articulated sharply, sounding similar to "di." According to Quantz, the accent in "tiri" fell on the second syllable, with "ti" being short and "ri" long.

Quantz directed students never to begin with the syllable "ri" but instead to tongue the first two notes with "ti." For similar notes that followed, the performer was to continue with "tiri" until a variation in rhythm or a rest occurred. (See Figure 10, p. 65.)

If a rest took the place of the first note, Quantz directed players to continue with "tiri." (See Figure 11, p. 65.)

In three-four, three-eight, six-eight, nine-eight, or twelve-eight time, if

the first note of a group of three was dotted, then the first two notes were to receive "ti," and the last "ri." (See Figure 12.)

Figure 10

Quantz's Use of "TiRi" with
Dotted Rhythms

Figure 11

Quantz's Use of "TiRi" with Dotted Rhythms
and a Rest on the Downbeat

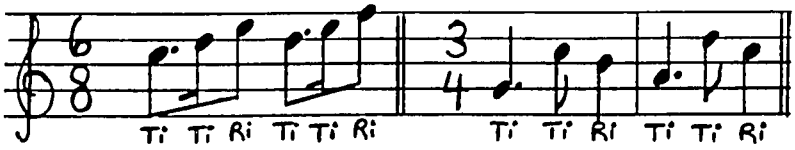


Figure 12

Quantz's Use of "TiRi" with Dotted Rhythms
in Meters of 3/4, 3/8, 6/8, 9/8, 12/8

For notes without dots, Quantz recommended using "di" in place of "ti," stating that, "Quickness does not permit articulation with 'ti' in passage-work; for there it would strike the ear disagreeably, and would eventually make the notes all to be unequal."[9] If a section was to be played more quickly than "diri" could be articulated, Quantz instructed flutists to slur either the third and fourth notes, or the first and second, the later being preferred. (See Figure 13.)

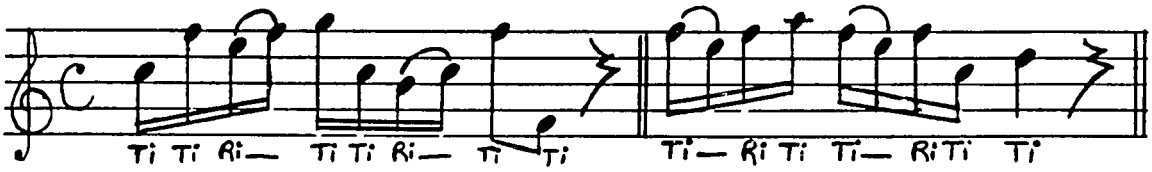


Figure 13

Quantz's Use of Slurs in Passages
Too Quick for "DiRi"

Where a longer note was followed by two shorter ones, Quantz advised using "di" for the first two notes, and "ri" for the third, as in Figure 14.

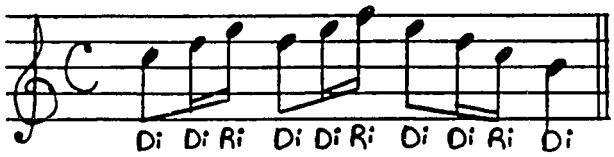


Figure 14

Quantz's Use of "DiRi" for a Long Note
Followed by Two Shorter Notes

This same syllable order also applied to three equal eighth notes and to triplets. (See Figure 15.)

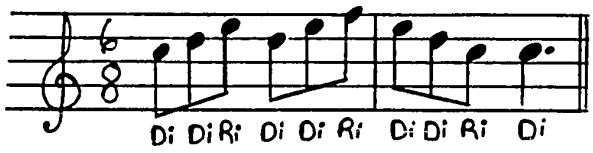


Figure 15

Quantz's Use of "DiRi" for Three Equal Notes of Triplets

Use of the Syllable "Did'll" or Double Tongue

For extremely quick passages, Quantz advocated the use of double tongue with the pronunciation of "did'll." This articulation, consisting of two syilables, was to be pronounced "did'll" rather the "didel" or "dili," suppressing the vowel which might appear in the second syllable. To articulate "did'll," Quantz directed students to,

> First say 'di' and while the tip of the tongue springs forward to the palate, quickly draw the middle portion of the tongue downward a little on both sides, away from the palate, so that the wind is expelled on both sides obliquely between the teeth.[10]

This motion produced the second syllable "d'll" which could not be articulated without first saying "di." In its accent, "did'll" was opposite of "tiri," with stress placed on the first syllable instead of the second.

To learn the use of double tongue, Quantz suggested playing several notes of the same pitch in the middle register. Without moving the fingers, the

flutist could instead concentrate on his sound, for a good tone was difficult in early stages of this articulation. Quantz wrote examples for students to practice in order, called Progressive Double Tongue Exercises. (See Figure 16.) The flutist was to first practice double tongue on one pitch, with a combination of long and short notes until all could be produced clearly. Then he was to add a few more notes, grouping four quick notes together. Finally, when this was mastered, double tonguing was used with notes moving in steps.

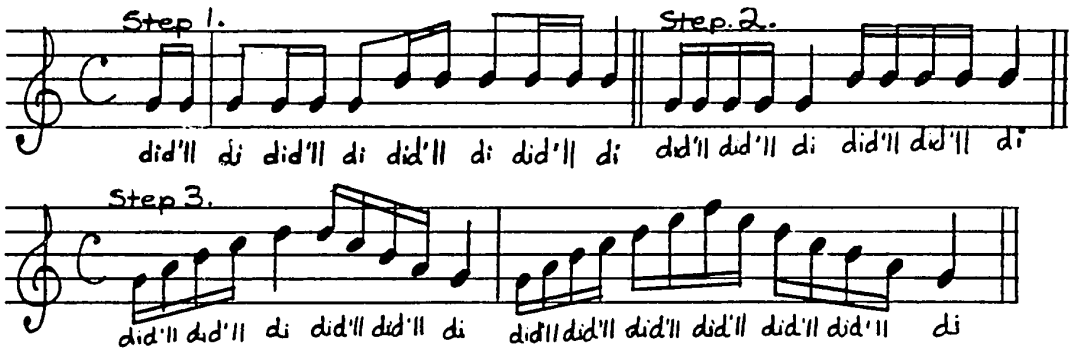


Figure 16

Quantz's Progressive Double Tongue Exercises

Quantz warned students to be careful that the tongue did not anticipate the fingers, a problem especially for beginners. He suggested holding on to the first note with "di" a little more than the second, "d'll," which was to be played slightly shorter.

On his treatise, Quantz displayed several examples of double tongue application in varying circumstances, a few of which will be represented here. For passages with notes of the same value and without large leaps, the downbeat note always received "di" and the second, "d'll," as seen in Figure 17, p. 69.

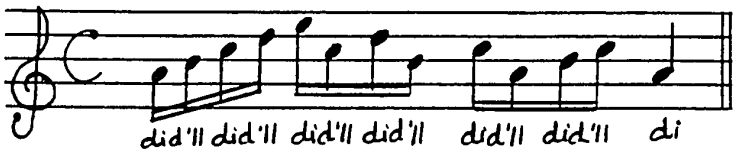


Figure 17

Quantz's Use of Double Tongue in Passages
with Notes of the Same Value and
Small Interval Leaps

If a rest fell on the downbeat, the first two notes were tongued with "ti," with the others receiving "di" as seen in Figure 18.

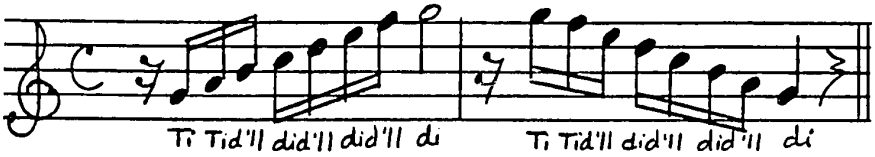


Figure 18

Quantz's Use of Double Tongue in Passages
with a Rest on the Downbeat

If the first two notes were the same, the first three were to be tongued with "ti." If the last two were the same, the third was tongued with "di," and the fourth was tongued with "ti," as seen in Figure 19, p. 70. Where the first of the quick notes was tied to a long preceding note, or if a dot was substituted for it, this note was to be expressed with a breath from the chest, saying "hi" instead of "di." (See Figure 20, p. 70.)

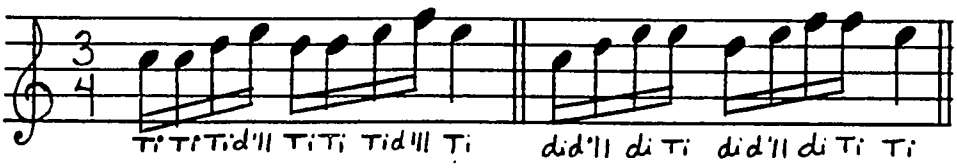


Figure 19

Quantz's Use of Double Tongue
for Repeated Notes

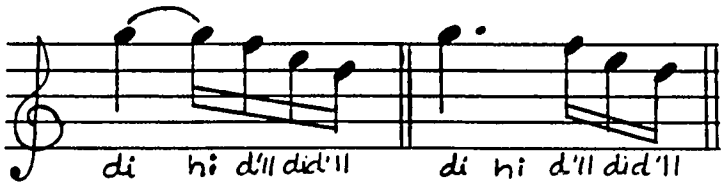


Figure 20

Quantz's Use of Breath Articulation
for Tied or Dotted Notes

In the preceding figure, the note after the dot could also be tongued with "ti," as seen in Figure 21.

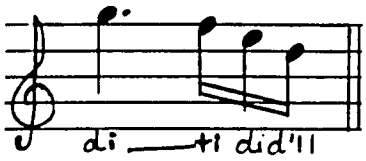


Figure 21

Quantz's Alternate Use of Tonguing
Tied or Dotted Notes

For three equal notes, whether they occurred as triplets or appeared in six-eight and similar meters, the first two notes always received "did'll" and the third, "di." (See Figure 22.)

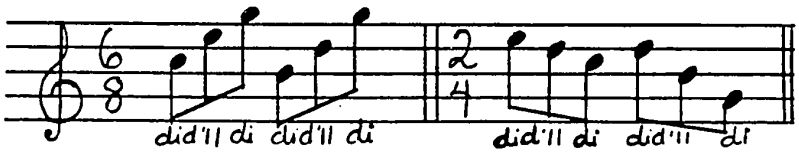


Figure 22

Quantz's Use of "Did'll" for Three Equal Notes or Triplets

If a rest occurred in place of the first note, the following two notes were given "did'll," as shown in Figure 23.

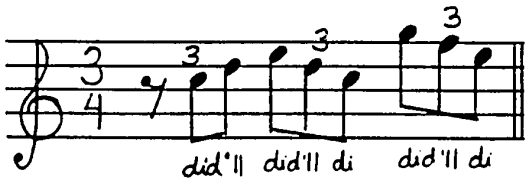


Figure 23

Quantz's Use of "Did'll" for Three Equal Notes or Triplets in Passages with a Rest on the Downbeat

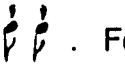
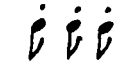
IV. ARTICULATION ACCORDING TO BOEHM

In his treatise, Boehm did not devote a full chapter to articulation but covered this topic briefly in his section on musical interpretation. Instead of describing precisely the performance methods of various articulations, he instead focused on where to place these in the music. Boehm stated:

> The articulations, accents, and nuances of the tone strength, especially in older or carelessly copied music, are designated at the best in a very faulty way and often not at all. Much is left therefore to the discretion and individual comprehension of the performer.[11]

Boehm believed only through the study of good song music could a performer know when and why a note should be played staccato or be slurred. He felt it was necessary to give the piece expression corresponding to the words of song music. The song text showed not only where to articulate, but also the phrasing, dynamics, accents, and other musical feelings as well. Boehm wrote:

> Since it is only possible to indicate the declamation or correct expression of the words of a text on an instrument by means of articulation, that is by striking the notes according to the meaning or syllable-beginnings of the words, it is important to learn the necessary art of tonguing and its proper application.[12]

Boehm cited three different types of tonguing notated by symbols above or below the notes. According to Boehm, a very short staccato was marked by little lines:  . For staccatos that were somewhat longer than these, points were used over or under the notes:  . Notes having points over which there was a slur, indicated that the tone was to have a new impulse, but that the air stream was not to be interrupted:  .
Boehm felt that tonguing should be executed with the syllable "de" for a smooth and soft effect.

When performing song music, Boehm instructed students never to

slur any note over to the first note of the next measure. The note falling on the strong part of the measure, the downbeat, had to receive its proper accent, and thus was tongued. Slurring a note to the following measure was only justified in dance music and comic songs, or when employed as syncopation, as in a canon or a fugue.

These brief instructions for articulation in song music were all that Boehm had to say on the subject. He did not mention articulation for any other types of pieces, nor did he explain the production and application of various tonguings as did previous pedagogues.

V. INFLUENCES ON THE PRESENT DAY FLUTIST

As in centuries past, the articulation methods in use today vary to some degree between nationalities, teachers, and personal preferences. Modern articulation practices are more standardized and consistent, however, than those of the past two hundred years. Flutists of these past centuries struggled to find the best workable articulations on their temperamental instruments, having no precedents set before them. Articulations of the modern era have evolved out of these and have been perfected with the ability to express every emotion of music.

Hotteterre taught the two main tongue strokes of "tu" and "ru." Today, the syllable "tu" is one of the most common pronunciations for single tonguing along with "ta," "te" and "ti." Quantz instructed students to use "ti" for single tonguing lively and quick notes, and "di" for slow and sustained notes. In modern flute pedagogy, the syllable "di," "du," or "da" is an accepted practice for softer and more gently tongued notes, often in sustained passages.

Corrette stated that single tonguing was nothing more than small

attacks by the tongue behind the lip opening. Quantz, in contrast, gave detailed instructions for tonguing, directing students to curve the tips of their tongues and draw them down from the palate. This curved position is seldom used today, with most flutists preferring a straight tongue. According to Quantz, the back of the tongue was to remain in place, inhibiting excessive mouth movement. Today, flutists are still taught that the tongue is the only part of the mouth that should move. John Krell writes in his book, Kincaidiana, "Never nibble the articulations with the jaw or lips."[13] This upsets the placement of tone, changes the quality, and slows down the speed of tonguing.

Tongue placement of the modern flutist varies form player to player. Many believe that the tongue should touch the teeth as a percussive effect, while others maintain that tonguing should take place on the palate behind the upper teeth.[14] John Krell suggests positioning the tongue on the gum ridge.[15] In his book, Flute Technique, F. B. Chapman speaks of positioning the tongue differently for the third register. He says, "The tip of the tongue should not be too near to the teeth except in tonguing the notes of the third register . . . the tongue then moves forward."[16] Quantz might have influenced Chapman with his instructions to keep the tongue back for the low notes and move it gradually forward when ascending to higher pitches.

Hotteterre's use of the articulation "tu-ru" is obsolete today and may have been out of use by as early as the first third of the eighteenth century, according to Corrette, although Quantz used a similar articulation. The use of "tiri" by Quantz appears to have similarities to the "tu-ru" of Hotteterre, although the "ri" was more sharply tongued. Hotteterre's "tu-ru" was often associated with dotted rhythm as was the "ti-ri" of Quantz. In her introduction to the flute treatise of Corrette, Carol Farrar states that Hotteterre's use of "tu-ru" was nothing more

than a tongued note followed by a slurred note.[17] Although this has not been proven as an absolute certainty, Farrar's explanation offers a strong possibility.

Both Corrette and Quantz compared articulation on the flute to bow strokes on the violin. Modern day flute instruction books use this same analogy as exemplified by Nancy Toff, "Perhaps the easiest way to explain musical application is to compare it with violin bowing."[18] Philip Bate adds, "The most generally useful thing we can say to a wind student is probably, 'look at the marks as a violinist would at his bowings.'"[19] John Krell sums up the importance of this flute and violin articulation comparison with his statement:

> Flutists can learn much from the articulation of strings who appear to have the greatest variety and option of articulations. With the many bowing potentials of the arm, wrist, and fingers, the violinist has an infinite assortment of attacks, sustainings, and releases ranging through the detaches, portes, loures, lances, marteles, staccatos, flying staccatos, spicattos, and ricochets.[20]

The practice of stopping the pitch by cutting off the air with the tongue was commonly used in the eighteenth and nineteenth centuries. Quantz promoted the use of this method for staccatos. Flutists of the twentieth century are advised to keep the end of all pitches open, not stopping tone with the tongue or lips, but rather by a cessation of breath, as controlled by the diaphragm. In his flute method book, Edwin Putnik explains that notes should not be cut off by the tongue as with the syllable "tut," but rather the air flow should be stopped. For a series of tongued notes, Putnik states that "preparing the tonguing for the following articulation automatically cuts off the previous note."[21]

For notes that have both slurs and dots over or under the notes, Corrette and Boehm suggested tonguing each note with a sustained air flow. This practice, similar to the violin loure, is still in use today. When a slur mark is placed over a group of repeated notes, this indicates an overall smoothness

with a light separation. In modern day flute playing, these repeated notes are lightly tongued and the air flow is sustained, as in passages with differing pitches.[22] Quantz did not want flutists of his day to tongue notes of this type. Instead, he directed students to articulate form the chest, using the breath to separate the pitches.

For extremely rapid passages, Quantz instructed students to use double tongue. The creator of the double tongue method remains a mystery to modern day scholars, even though Quantz was one of the earliest sources to mention this practice. Although a forerunner of modern double tonguing, this eighteenth century articulation differs from that of today. The first syllable of double tonguing, "di" of "ti," has remained the same through the centuries, but the second has changed. Quantz directed students to use "d'll" for the second syllable in double tonguing. To produce this, the tongue was pulled down and air was expelled on both sides between the teeth. In present times, the back of the tongue pronounces the syllable "ku" which alternates with "tu," producing "tu-ku, tu-ku." The syllable "ku" came into use about 1820, regarded in earlier eras as too explosive in character.[23]

Nancy Toff writes:

> Today, the most accepted pronunciation of double tonguing uses the syllables Te-Ke or Tuh-Kuh, with Duh-Guh a close third and a frequent alternative in passages where mezzo-staccato or loure articulation is indicated. Other possibilities, though weaker, are Ru-Ru, Ta-Ka, Too-Koo, Da-Ga, Doo-Goo, and Too-tle. Too-tle is the weakest of the lot, because the indistinctness of the second syllable prevents the escape of air, rather than propelling it as the initial syllable should.[24]

Boehm's treatment of articulation, although brief, offers the contemporary flutist a different outlook on this subject. Through Boehm's directions and examples, the student can learn where to place the proper articulations in a sensitive and musical manner. Boehm instructed students to

study the words and expression of song music in order to gain knowledge and experience in the placement of suitable articulations, a beneficial practice for today's flutist as well.

FOOTNOTES

[1]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 36.

[2]Ibid., p. 37.

[3]Ibid., p. 42.

[4]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 34.

[5]Ibid., p. 7.

[6]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 72.

[7]Ibid., p. 75.

[8]Ibid., p. 75.

[9]Ibid., p. 77.

[10]Ibid., p. 79.

[11]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 146.

[12]Ibid., p. 147.

[13]John Krell, Kincaidiana (Culver City, Calif.: Trio Associates, 1973), p. 19.

[14]Philip Bate, The Flute, 2nd ed. (New York: W. W. Norton and Co., 1979), p. 243.

[15]John Krell, Kincaidiana (Culver City, Calif.: Trio Associates, 1973), p. 18.

[16]F. B. Chapman, Flute Technique, 4th ed. (New York: Oxford University Press, 1973), p. 19.

FOOTNOTES (Cont.)

[17]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 6.

[18]Nancy Toff, The Flute Book (New York: Scribner's Sons, 1985), p. 92.

[19]Philip Bate, The Flute, 2nd ed. (New York: W. W. Norton and Co., 1979), p. 243.

[20]John Krell, Kincaidiana (Culver City, Calif.: Trio Associates, 1973), p. 17.

[21]Edwin Putnik, The Art of Flute Playing (Illinois: Summy-Birchard Company, 1970), p. 39.

[22]Philip Bate, The Flute, 2nd ed. (New York: W. W. Norton and Co., 1979), p. 243.

[23]Ibid., p. 244.

[24]Nancy Toff, The Flute Book (New York: Scribner's Sons, 1985), p. 119.

CHAPTER VIII

ORNAMENTATION

Ornamentation has long been a topic of intrigue and debate. Of the four flute treatises examined in this thesis, each contains some degree of information on this topic. Historically, methods of ornamentation and embellishment were transmitted largely by aural tradition; the examples written in these tutors were not intended as immutable rules but as suggestions, allowing the performer interpretive freedom. During the time of Hotteterre and Corrette, ornamentation was either realized from abbreviated notation or freely improvised.

In the late eighteenth century, performers grew less concerned with extemporaneous ornamentation as composers became more meticulous about making their intentions known in the written music. Categorized as mid-eighteenth century rococo, Quantz's flute treatise of 1752 and his compositions reflect qualities of both the baroque and early classic era. As with Hotteterre and Corrette, Quantz explained the realization of written notation, although dealing only with trills and appoggiaturas, the ornamental mainstays in the classic era.[1]

As the nineteenth century approached, a new emphasis was placed on the melody line in composition, resulting in changes of its embellishments. Ornaments were reduced in number and melodic elaboration, and where used, were incorporated in the written out notation.

In contrast to the eighteenth century, ornamentation did not play a major role in the nineteenth century. Although many compositions for the flute

were of a bravura style, lavish embellishments were written into the composition with the exception of some cadenzas. In his flute treatise of 1871, Boehm briefly discussed the appoggiaturas, mordents, and trills most often found in music of his day.

I. ORNAMENTATION ACCORDING TO HOTTETERRE

Hotteterre began his topic of ornamentation by describing trills, or shakes, as "an agitation of two sounds, either a step or a half step apart, which are played alternately in rapid succession."[2] Trills were to be started on the higher note and finished on the lower. Tonguing occurred only on the first note, advised Hotteterre; the breath continued while the finger trilled rapidly. Flutists were instructed not to take another breath or tongue again during the execution of a trill. The number of times the finger needed to trill was determined only by the note value. Above all, Hotteterre warned not to rush the trill, "but instead to delay it about half the value of the note, especially in slow movements."[3]

To make his explanation of trills clear and easy, Hotteterre included detailed charts. He used the symbol of a cross mark over or before a note to indicate a trill.

Hotteterre suggested that flutists occasionally substitute vibrati ornaments in place of difficult trills. This type of finger vibrato was utilized to embellish the tone, adding life and vibrancy. The French word "*flattement*" was used by Hotteterre to denote a vibrato ornament. Vibrati were produced almost like regular trills, except the finger was always raised at the end. Contrary to the trill, a vibrato ornament involved the lower note often played on the edge of the holes; a player would, in effect, trill to the lower note.

As previously stated, Hotteterre grouped his articulation instructions in

the same chapter as his directions for appoggiaturas, springers, and terminated trills. Reasons for this are not definite although he mentioned that all of these elements were absolutely necessary for perfect performance.

Hotteterre concisely explained appoggiaturas and gave an illustration for their proper use. According to his instructions, an ascending appoggiatura was "a stroke of the tongue anticipated by a step below the note upon which it is to be played."[4] (See Figure 24.)

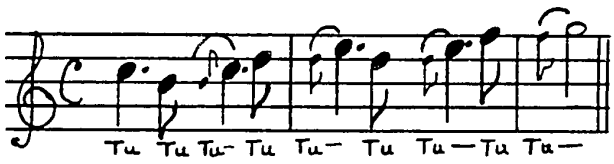


Figure 24

Hotteterre's Ascending Appoggiaturas

The descending appoggiatura was started one step above and rarely used except in descending thirds. (See Figure 25.)

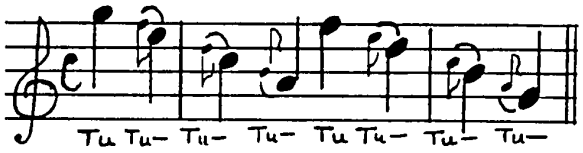


Figure 25

Hotteterre's Descending Appoggiaturas

The small appoggiatura notes, indicating the lower and upper suspensions, were not counted in the timing but were tongued and then slurred to the main notes.

Even more brief was Hotteterre's explanation of springers and terminated trills. The springer was the sound attached to the end of certain notes to give them more expression. (See Figure 26.)

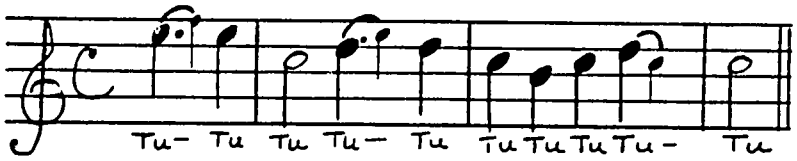


Figure 26

Hotteterre's Springer Ornaments

The terminated trill was an ordinary trill followed by two sixteenth notes, either slurred or tongued, as seen in Figure 27.

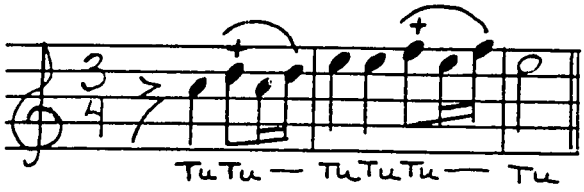


Figure 27

Hotteterre's Terminated Trills

Hotteterre's Terminated Trills

To produce a mordent ornament, Hotteterre instructed students to rapidly strike the finger hole once or twice, as in trilling, and then stop it suddenly. As in the performance of vibrati, the finger was to be raised at the end of the mordent. Also, this ornament involved the lower tone. Vibrati and mordents were similarly produced, except that vibrati were played on the edge of the tone holes while mordents were played directly on the holes. Hotteterre also mentioned that on certain notes where regular fingering was too difficult, vibrati was produced by shaking the flute with the right hand.

Hotteterre concluded his treatment of ornamentation with a summary statement:

> In general, it would be difficult to give precise instructions as to where these ornaments should be placed in playing. On the whole, it can be said that vibrati are frequently introduced on long notes: as on whole notes, on half notes, on dotted quarter notes, etc. The mordents are ordinarily played on short notes: as on plain quarter notes in fast movements, and on eighth notes in the time signatures in which these are played evenly. It is hardly possible to give more positive rules concerning the distribution of these ornaments. Taste and experience, rather than theory, teach their proper use.5

II. ORNAMENTATION ACCORDING TO COTTETTE

Like Hotteterre, Corrette began his instructions for ornamentation with a discussion of the shake or trill, probably the most common of the embellishments. He defined the trill as the agitation of two notes struck alternately and as rapidly as possible. In concertos and sonatas, the trill was notated by a "t" and in older French music, by a cross sign, "+," over long notes such as whole, half, or dotted quarters. Corrette believed that the trill was to be

uniform speed.[6]

Corrette instructed students to begin the trill from the note above, giving a tongue attack on that note. The finger was then to be lowered swiftly several times on the tone hole without varying the air speed and without taking a new breath. The trill was to be finished on the lower note, as also suggested by Hotteterre.

The key of the piece determined if the trill was prepared by a step or half step above the written note. "It is very necessary to know whether one is playing in a major or minor mode in order to prepare for the trill,"[7] wrote Corrette.

Corrette explained that the value of the note over which the trill sign was placed, determined the duration of the trill. Trills were long over whole notes and half notes and shorter over quarter notes and eighth notes.

Another type of ornament, the turn, was treated briefly by Corrette. The turn was performed like an ordinary trill but followed with two small notes which were either slurred or articulated. Corrette's turn was in essence the same as Hotteterre's terminated trill. This ornament was most often made on long notes that ascended by conjunct degrees.

Corrette followed his discussion on trills and turns with several trill charts encompassing all possible combinations of fingerings for these ornaments.

Another type of ornament to which Corrette devoted a short chapter was called "softening." Corrette described this embellishment as extremely moving in tender pieces, especially on long notes. Softening was used to swell and diminish the tone, indicated by the sign  , but rarely marked. According to Corrette, this ornament was produced by lowering and raising a finger several times over a tone hole but never completely closing the hole. This resulted in a

slight fluctuation of pitch, giving color to the tone. Where regular fingering was too difficult for softening, Corrette suggested the same technique as employed by Hotteterre for his comparable ornament, vibrato; the ornament was produced by shaking the flute with the right hand.

Like Hotteterre, Corrette also gave a brief explanation of the mordent ornament. He said that the mordent was produced by "beating a finger one or several times on the nearest hole to the tone or semitone where one wants to realize it."[8] Corrette listed two types of mordents: the simple mordent and the double mordent. For the simple mordent, the finger was to strike the tone hole once or twice, whereas with the double mordent, the finger beat several times upon the hole. Like Hotteterre, Corrette directed students to make the mordent from the note below the written pitch.

Corrette grouped instructions for appoggiatura and springer ornaments in a concise chapter of their own. He stated that the appoggiatura, marked by a small note, ♪ , was frequently made in passages that ascended by conjunct degrees of an eighth note and a quarter note. Appoggiaturas were to be slurred to the main note as indicated in Figure 28.

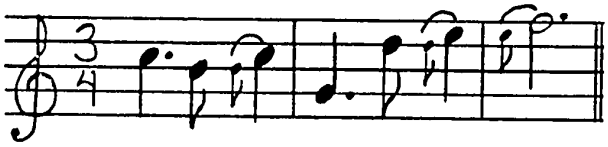


Figure 28

Corrette's Appoggiatura Ornaments

The springer, also notated with a small note, ♪ , was attached to the

end of the main note by a slur. When this ornament was not marked, Corrette instructed students to employ it on long notes when descending by conjunct degrees, or where several repeated notes occurred, as in Figure 29.

Figure 29

Corrette's Springer Ornaments

The final type of ornament described by Corrette was the *martellement* or tremolo. The tremolo was started on the pitch lower than the written note and continued with two or three quick strokes from above. Although sounding similar to this ornament, the trill employed the pitch above the written note. The tremolo was often used on the final note of a cadence or piece. To play it well, Corrette suggested diminishing the volume of the flute's tone.

Corrette concluded his directions for ornamentation by pointing out that all of these embellishments were not always marked in the music. For beginners, he recommended performing pieces only where the ornaments were marked.

Corrette warned flutists never to rush ornaments even if they could be played very fast. Instead, he advised, "rather take one's time, prepare one's fingers, and execute with easiness and liberty, without forcing the wind and without rushing the meter."[9]

III. ORNAMENTATION ACCORDING TO QUANTZ

Quantz devoted two chapters to ornamentation in his flute treatise. The first chapter dealt with appoggiaturas and the "little essential graces related to them."[10] Quantz believed appoggiaturas were often needed to embellish the melody, creating dissonances which were resolved on the following notes. This added variation, transforming a plain melody into one that would "rouse the ear."[11]

Quantz explained that appoggiaturas were marked with small notes, receiving their value from the notes before which they stood. Approaching the main note either from above or below, these ornaments were gently tongued in place of the principal notes on the beat. If the preceding note was one or two steps higher than the following note before which the appoggiatura was found, the appoggiatura was taken from above. (See Figure 30.)

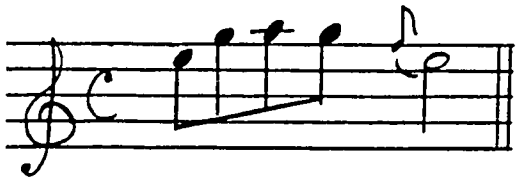


Figure 30

Quantz's Descending Appoggiaturas

If the preceding note was lower than the following one, the appoggiatura was taken from below. (See Figure 31, p. 89.)

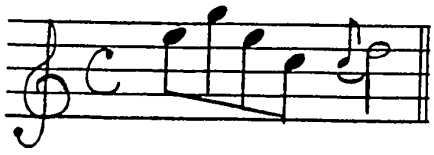


Figure 31

Quantz's Ascending Appoggiaturas

According to Quantz, there were two kinds of appoggiaturas: accented and passing appoggiaturas. Accented appoggiaturas fell on the downbeat and were commonly found before a long note, followed by a short note. This type of appoggiatura was held for half the value of the following principle note, and played as illustrated in Figure 32.

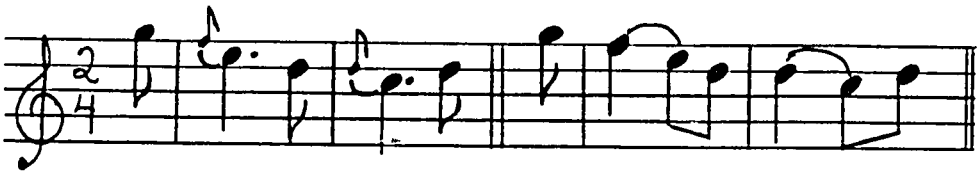
written played

Figure 32

Quantz's Accented Appoggiaturas

If the note with the accented appoggiatura was dotted, it was divided into three parts, with the appoggiatura receiving two parts, and the principal note receiving only one part, or the value of the dot. This rule applied to all

dotted quarter notes. (See Figure 33.)

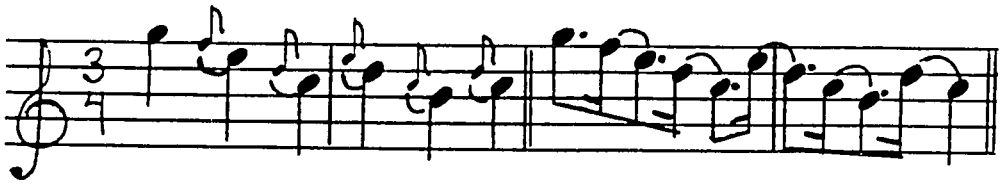


written played

Figure 33

Quantz's Accented Appoggiaturas
for Dotted Notes

Passing appoggiaturas occurred when several notes of the same value descended in leaps of thirds. (See Figure 34.)



written played

Figure 34

Quantz's Passing Appoggiaturas

For all types of appoggiaturas, where a rest followed the ornamented note, the appoggiatura received the value of the rest. (See Figure 35, p. 91.) This rule did not apply if the need to take a breath made it impossible.

written played

Figure 35

Quantz's Appoggiaturas
Followed by Rests

Quantz felt that it was not enough to play written appoggiaturas as marked; one should be able to add them at the appropriate places when not indicated. As an aid for learning this process, he gave the following rule as a guide:

> If a long note follows one or more short notes on the downbeat or upbeat, and remains in a constant harmony, an appoggiatura may be placed before the long note, in order to constantly maintain the agreeability of the melody. The preceding note will show whether it must be taken from above or below.[12]

Quantz believed that several other embellishments, including the half-shake, the mordent, and the turn were outgrowths of appoggiaturas. Although he did not expound upon these ornaments, Quantz briefly explained that there were two kinds of half-shakes added to the upper appoggiaturas. (See Figure 36, p. 92.) Quantz gave an illustration for two types of mordents which were added to the lower appoggiaturas, (See Figure 37, p. 92.), but added no further information on these particular ornaments. In addition to this, he also displayed one type of turn/*gruppetto* often added to the lower appoggiaturas, as shown in Figure 38, p. 92.

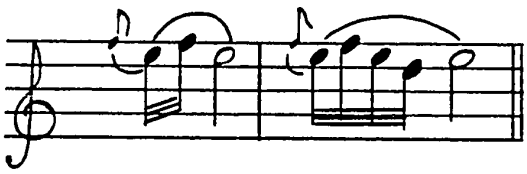


Figure 36

Quantz's Two types of Half-Shakes
Added to Upper Appoggiaturas

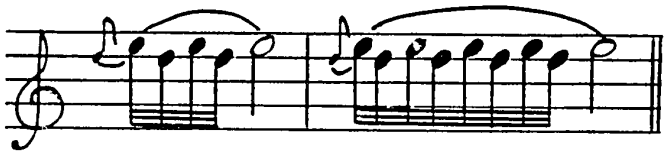


Figure 37

Quantz's Two Types of Mordents Added
to Lower Appoggiatura

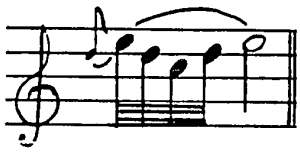


Figure 38

Quantz's Turn Added to the
Lower Appoggiatura

Quantz went on to say that these half-shakes, mordents, and turns were employed to add cheer and excitement to the piece, while the simple appoggiaturas were used to arouse tenderness and melancholy. Although ornaments were considered very necessary, Quantz warned that these must be used sparingly or they could become tiresome and overwhelming. He stated:

> A sublime, majestic, and vigorous air can be made common and insipid through poorly introduced appoggiaturas, and a melancholy and tender air, on the contrary, too gay and bold through an excessive load of shakes and other little graces, thus spoiling the balanced design of the composer. . . The little embellishments should be used like seasoning at a meal.[13]

As previously stated, Quantz devoted an entire chapter to the subject of shakes or trills. He considered these indispensable, adding brilliance to one's playing. Trills were to be practiced to perfection, recommended Quantz.

With regards to the speed of trills, Quantz stated that they need not all be struck with the same velocity. Much depended on the location of the performance. When playing in a large reverberating hall, a slower trill was found more effective than a rapid trill; a fast trill was made indistinct because of the echo. Conversely, in a small sound-absorbing room, where the audience was close, a faster trill was preferred over a slow trill. In addition to room acoustics, the character of the piece influenced trill speed: for melancholy pieces, trills were performed more slowly, in happy pieces, faster trills were to be employed. Quantz warned against excessive slowness or quickness when performing trills/shakes, writing:

> The very slow shake is customary only in French singing, and is of a little use as the very quick trembling one, which the French call *chevroté* (bleating) . . . A moderately quick and even shake is much more difficult to learn than the very fast trembling one, and the latter must be considered a defect.[14]

Quantz believed that trills must be played evenly, at a uniform and

moderate speed. This contrasted to the instructions of Corrette, who directed students to gradually increase the speed of trills. Quantz advised flutists not to raise their fingers too high or unevenly, or else an even trill would be difficult to obtain. For long trills, Quantz recommended making approximately four finger movements, and thus eight notes as seen in Figure 39. In fast and lively pieces, the short trills were to be struck more quickly.

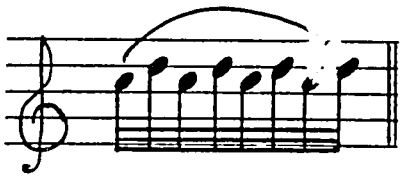


Figure 39

Quantz's Long Trills

Finally, Quantz mentioned that trill speed was gauged in accordance to the register of the ornamented note. He wrote:

> I believe that if the shake is struck at the speed described above in the octave C^1 to C^{11}, it can be struck a little more quickly in the octave above; in the octave below it can be struck a little more slowly, and in the lowest octave still more slowly.[15]

Unlike Hotteterre and Corrette, Quantz was of the opinion that all trills were to have appoggiatura and termination notes. The appoggiatura was taken from either above or below, according to the note position, as previously explained. The termination consisted of two notes following the shake, performed at the same speed as the trill. The appoggiatura and termination were sometimes written out in the notation with separate notes, as in Figure 40, p. 95.

Figure 40

Quantz's Trill with Written Appoggiatura
and Termination

If a plain note was found with a trill sign above it, (See Figure 41.) Quantz explained that the appoggiatura and termination were implied, since "without them the shake would be neither complete nor sufficiently brilliant."[16] Quantz added that the trill and termination were always to be slurred to the appoggiatura, which was tongued.

Quantz ended his chapter on trills/shakes with a list and explanation of all trills for the chromatic pitches from low D^{1} to high $D\#^{111}$ on the flute.

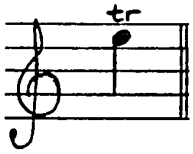


Figure 41

Quantz's Trill with Implied Appoggiatura
and Termination

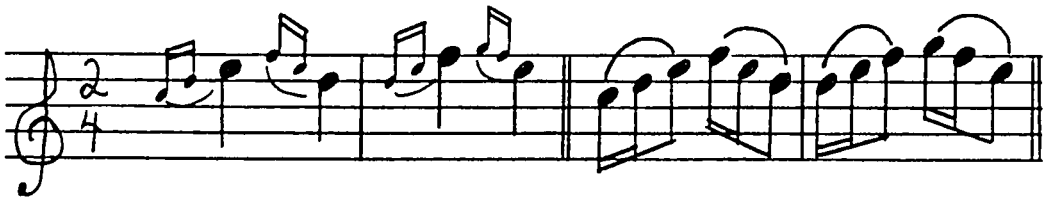
IV. ORNAMENTATION ACCORDING TO BOEHM

As with his teachings on articulation, Boehm grouped the topic of ornamentation under the chapter heading of musical interpretation. Unlike the previously studied flute treatises, his treatment of ornamentation was brief, mentioning only the basics.

Boehm began his ornamentation instructions by discussing the proper place and time to include embellishments. He advised the addition of ornaments where the repetition of a theme occurred. These served to heighten expression and alleviate monotony. He suggested performing ornaments in a light and graceful style.

According to Boehm, the simplest ornament was the accented appoggiatura which moved either upwards or downwards. This appoggiatura was written with a small note which received half of the time value of the principal note, and one-third for unequal division. This differed from the writings of Quantz for unequal division. Boehm stated that the appoggiatura received two-thirds, while the principal note received one-third.

Boehm also wrote of the double appoggiatura which consisted of two or three small notes. These were indicated by small notes preceding the principal note, to be played on the beat as seen in Figure 42.

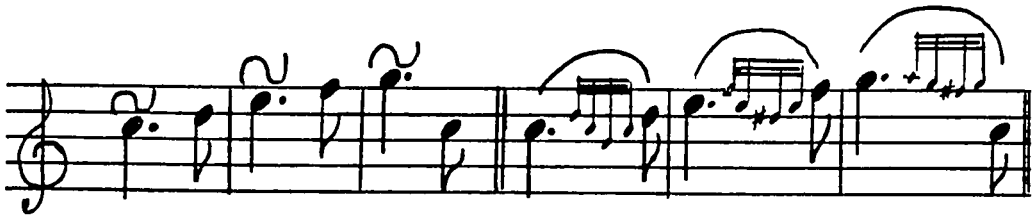


written played

Figure 42

Boehm's Double Appoggiaturas

Boehm used the term "true mordent" to denote the *gruppetto*, in modern times called the "turn." This ornament consisted of three or four small notes moving within a compass of a minor third, first ascending and then descending around the given note, as in Figure 43.



written played

Figure 43

Boehm's *Gruppetto*

The final ornament that Boehm discussed was the trill. This consisted of the alternation of two adjacent tones, either a major or minor second apart, smoothly and rapidly repeated. Boehm explained the trill:

> Following the best old Italian school of song, the trill should commence upon the principal note, and not upon the auxiliary note; the two notes must have equal tone strength, and exactly equal time value, and the alternation should be slower in Adagio, and more rapid in Allegro.[17]

The trill was to be gradually accelerated with a swelling and diminishing of tone when used at a final cadence or a fermata. Regarding trill speed, Boehm's instructions coincided with those of Corrette, but opposed those of Quantz, which discouraged acceleration. Boehm advised flutists to end every trill with a resolution formed by the principal note preceded by the next lower note. (See Figure 44, p. 98.) These resolved trills were identical to the terminated trills

Figure 44

Boehm's Trill Resolution

described by the aforementioned flute tutors. According to Boehm, all trills "not resting upon the note of the harmony, should begin with the auxiliary note, and proceed by means of a final resolution."[18] Boehm reinforced his previously mentioned idea of accelerated trills and denounced the bleating trill, as did Quantz, with this statement:

> All trills must begin slowly, and very gradually become more rapid, a perfect equality of the tones being maintained throughout, and the production of a so-called bleating or *"bockstriller"* must be avoided.[19]

V. INFLUENCES ON THE PRESENT DAY FLUTIST

Ornamentation has always been a topic of controversy among musicians. Numerous instruction books have been written on this subject offering advice to well-intended performers. The four flute treatises researched here present diverse viewpoints on the execution of several ornaments. The present day flutist should use these tutors as "ornament encyclopedias," keeping them as ready sources of information on performance practices. Through careful study of these tutors, considering the era and nationality of each author, the musician can be better equipped to perform ornamentation in

a historically accurate manner.

All of these instructions for ornamentation listed throughout this chapter can be of use to the modern performer, with the exception of finger vibrati. This vibrato ornament, requiring the flutist to play on the edge of the tone holes, might possibly be imitated on the French style open-hole model flute, but not on the closed-hole plateau model.

Though redundant to restate all of the rules of ornamentation according to each flute treatise, mention must be made of the incorporation of ornaments in a plain melody. This dilemma of where to place ornaments has always puzzled flutists. Hotteterre suggested using vibrati on long notes and mordents on short notes in fast movements. Other than this short statement, he gave no advice except to mention that taste and experience, rather than theory, taught proper ornament use. Corrette recommended learning the proper placement of unmarked ornaments by practicing many pieces where they were already notated. This served as an example by which the student later patterned his own ornament additions. In his treatise, Quantz listed a rule for including appoggiaturas in music where not marked. He stated that an appoggiatura could be performed before a long note which followed one or more short notes. Although he did not mention precisely where to place other types of ornaments, Quantz associated certain embellishments with the style of pieces. Half-shakes, mordents, and turns were used to add cheer and excitement, while simple appoggiaturas were employed to arouse a melancholy spirit. Lastly, Boehm advised incorporating ornaments where the repetition of a theme occurred, adding variation. Resolved or terminated trills were to be used at fermatas or final cadences, according to Boehm.

Flutists of the present day often encounter ornamentation which is puzzling and unclear. With the examination of historical treatises, performance

of these embellishments is often made lucid, enabling the flutist to execute the piece as originally intended by the composer. Although sketchy, the advice given in these treatises for the addition of ornaments gives the performer a rough idea of this technique. These four flute treatises present valuable information on ornamentation according to the historical practices of their day.

FOOTNOTES

[1]Nancy Toff, The Flute Book, (New York: Charles Scribner's Sons, 1985), p. 219.

[2]Jacques-Martin Hotteterre, Principles of the Flute, Recorder and Oboe, trans. Paul Marshall Douglas (New York: Dover Publications, 1968), p. 20.

[3]Ibid., p. 20.

[4]Ibid., p. 42.

[5]Ibid., p. 47.

[6]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 102.

[7]Carol Reglin Farrar, Michel Corrette and Flute Playing in the Eighteenth Century (New York: Institute of Medieval Music, Ltd., 1970), p. 36.

[8]Ibid., p. 44.

[9]Ibid., p. 47.

[10]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 91.

[11]Ibid., p. 91.

[12]Ibid., p. 47.

[13]Ibid., p. 99.

[14]Ibid., p. 101.

[15]Ibid., p. 103.

[16]Ibid., p. 103.

[17]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 154.

FOOTNOTES (Cont.)

[18]Ibid., p. 155.

[19]Ibid., p. 156.

CHAPTER IX

METHOD OF PRACTICING

Two of the four treatises studied contain separate chapters on practice methods, offering a broad spectrum of ideas. Both Quantz and Boehm deemed this subject important enough to merit its own chapter. Boehm preceded his chapter on methods of practice with one on finger exercises, also covered in this section. Practice techniques and hints offered in these treatises were important for the beginning student as well as one of an advanced caliber. Both treatises contain numerous methods for practice which will be examined in the following paragraphs.

I. METHODS OF PRACTICE ACCORDING TO QUANTZ

At the beginning of his chapter on practice methods, Quantz summarized his previously discussed basics of flute playing, such as proper posture, hand position, embouchure formation, air velocity, articulation, and ornamentation. Since these topics have been covered previously in this study, only instructions not aforementioned will be analyzed in this section.

Whether in practice or performance, Quantz suggested that the player constantly keep the beat with his/her foot. The music was to be played at a uniform tempo without rushing the lively sections.

Quantz encouraged flute teachers to pay diligent attention during lessons in all areas of flute playing, so that the student did not overlook anything or get used to errors. In order to see all that the student was doing, Quantz

directed teachers to sit on the right side while the student played.

Quantz recommended that flutists take singing lessons, either before or during the same years that the flute was studied. Quantz reasoned that:

> Through it, he will acquire good execution in his playing so much more easily, and the insight that the art of singing provides will give him a great advantage in the reasonable embellishment of an Adagio. Then he will not remain just a simple player of the flute, but will be on the way to becoming, in time, a musician in the true sense.[1]

Especially for beginners, Quantz believed that it was important to study and perform pieces characteristic of different nations and provinces, learning to play each in the appropriate style. This helped the student acquire a general understanding of the differences in taste and music.

By listening to instrumentalists of all kinds, good singers, and "generally approved compositions," Quantz felt that flutists would greatly facilitate their paths toward good taste in music.[2] A beginner was advised to collect as many good pieces as he could afford, and use them for his daily practice.

Quantz encouraged beginners to learn to play everything distinctly and roundly, whether in rapid or slow pieces. Flutists were to strive for good execution, an essential element in playing, according to Quantz.

Although difficult for the beginner, all players were inspired by Quantz to achieve inner feeling:

> Inner feeling, the singing of the soul, yields a great advantage. . . The beginner must therefore seek gradually to arouse this feeling in himself. For if he is not himself moved by what he plays, he cannot hope for any profit from his efforts, and he will never move others through his playing, which should be his real aim.[3]

Inner feeling was not easily acquired by the beginner, since most of his concentration was spent on the fingers, tongue, and embouchure. Many

years were needed to obtain musical playing, although the beginner was to always strive for this goal.

Quantz believed that the length of daily practice depended on each person's ability and talent. He stated that with only one hour of practice per day, advancement would be slow in coming for the beginning student. He suggested that, "it is neither too much nor too little if the beginner fixes two hours in the morning for his practice, and an equal number in the afternoon, in addition always resting a little during practice."[4] When one had reached a level where he/she could produce all pieces distinctly and without difficulty, Quantz recommended one hour per day of practice to keep in proper condition.

II. METHODS OF PRACTICE ACCORDING TO BOEHM

As previously stated, Boehm included a short chapter on finger exercises before his chapter on methods of practice. Contrary to its title, this section on fingering did not contain actual exercises, but instead, advice on facility through practice techniques. For this reason, this chapter should be considered when studying methods of practice.

Boehm began his finger exercises by stating that it was important to play from memory as much as possible, so that the formation of the embouchure and tone could have undivided attention. To do this, Boehm recommended learning by memory all the scales and chords of every key throughout the range of the flute. These, Boehm said, were the foundation of all musical passages.

Boehm concluded from his own practice and that of his students, that the pupils who advanced most rapidly were those who took the time to patiently practice the complicated fingerings of a difficult phrase until it could be played smoothly. It was a waste of time to repeat the whole piece, believed Boehm,

advising students to practice only the troublesome few notes until perfected.

Under the chapter titled Method of Practicing, Boehm emphasized the need to secure a good embouchure at the beginning of each practice period. Boehm wrote, "Without a clear tone, nothing can be well and beautifully played. . . .The tone is the voice without which one cannot even begin to sing."[5]

Boehm cautioned against cramping the hands or arms, which resulted from unnecessary force in movement, prohibiting smoothness. He taught mind over matter, saying, "If one only forms the idea that a thing is not difficult, it becomes much easier."[6]

On the matter of fingering, Boehm wrote that many flute players had the bad habit of raising the fingers not only too high, but also to unequal heights. This problem not only resulted with fingers wasting time in the air, but also led to striking the keys with more force, causing an unwanted audible rattle or clapping sound. Boehm advised flutists to hold their fingers close to the keys, in a relaxed manner. In addition to this, all fingers were to be held at an equal height. This was easily learned by practicing scales in front of a mirror, detecting unnecessary movements.

Warning against excessive head and body movements, Boehm wrote:

> If one cannot express his feelings through the style of tone, he surely is not in a position to do so by head or body movements. A calm, firm attitude certainly presents a much more pleasing appearance to the hearer than visible exertions, or affected, sentimental movements.[7]

To conclude, Boehm declared that since bad habits were so difficult to overcome, they were to be removed at the beginning with the help of the best teacher available.

III. INFLUENCES ON THE PRESENT DAY FLUTIST

The majority of the practice methods given can be applied directly to modern day flute playing. Written nearly two hundred years ago, these ideas are still as pertinent today as they were in the eighteenth and nineteenth centuries.

Only a few of these practice methods can be challenged. Such is Quantz's suggestion for constant foot tapping to keep the beat. Today, most teachers suggest foot tapping for practice but never for performance. Tapping the toe is more highly recommended, causing less visual and audible distraction for the audience. Feeling the beat internally is considered preferable to toe tapping.

Many contemporary teachers disregard the directions of Quantz to sit or stand on the right side of the student during the lesson. Although his ideas make sense, most teachers prefer to stay out of the way of the projecting flute, instead, standing in front of or to the left of the student. These positions also have their own merits. To the left, the teacher can closely observe the embouchure while evading the weaving movements of the flutist. By positioning himself in front of the student, the teacher can not only observe all fingering and motion, but achieve a more accurate assessment of tone projection from an audience viewpoint.

A final method, challenged by students of today's busy society, might be in length of practice. Most beginning students are school age and do not have the patience or time for four hours of practice per day. On the other hand, flutists aspiring to a professional level would do well to follow the advice of Quantz. His recommendation to practice two hours in the morning, followed by a break, and then two hours in the afternoon with small breaks during the

sessions, was wise. Physically, the body must frequently change position, relaxing the muscles so cramping of the hands, neck, shoulders, and arms does not occur.

All of the practice methods recorded by Boehm are directly applicable to modern flute playing. If students were to heed all of his advice, difficulties would be brought to a minimum, with performance reaching a higher degree of perfection.

FOOTNOTES

[1]Johann Joachim Quantz, On Playing the Flute, trans. by Edward R. Reiliy (New York: Schirmer Books, 1966), p. 115.

[2]Ibid., p. 116.

[3]Ibid., p. 117.

[4]Ibid., p. 118.

[5]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 140.

[6]Ibid., p. 141.

[7]Ibid., p. 142.

CHAPTER X

MUSICAL INTERPRETATION

The flute treatises of Quantz and Boehm contain chapters on musical interpretation, giving students greater insight into the performance of music. Quantz dealt with the stylistic approach of playing an Allegro and an Adagio, (for definitions see paragraphs below), citing practices to be observed in their performance. In his chapter on musical interpretation, Boehm grouped together articulation, ornamentation, and, miscellaneous performance suggestions. Since the former two subjects were dealt with separately in previous chapters of this thesis, the focus here will then be directed to Boehm's various remarks on performance suggestions for interpretation.

I. THE MANNER OF PLAYING AN ALLEGRO ACCORDING TO QUANTZ

The term "Allegro," as described by Quantz, was used in a broad sense, and applied to all kinds of lively and quick pieces, from Allegro to Prestissimo. An Allegro was to be played roundly, distinctly, with liveliness, and articulation. Quantz reminded flutists to play each note with its proper value and to avoid rushing or dragging the music. If the fingers were raised too quickly, especially with ascending notes, the passage could easily be rushed. To avoid this, Quantz recommended that the first note of quick figures be stressed and held slightly.

Quantz gave several more warnings dealing with the tempos of an Allegro. He cautioned against hurrying the slow and singing notes interspersed

in lively pieces. Furthermore, Quantz emphasized not to play the Allegro more quickly than all the passages could be played at uniform speed. The tempo was to be set in accordance with the most difficult passages. Finally, Quantz warned performers to avoid haste in their playing:

> Notwithstanding all the liveliness required in the Allegro, you must never lose your composure. For everything that is hurriedly played causes your listeners anxiety rather than satisfaction. Your principal goal must always be the expression of the sentiment, not quick playing.[1]

Ornaments in Allegro pieces were to be played quickly and gaily, according to Quantz. In lively passages where several notes descended by step, if time permitted, half-shakes were to be used intermittently on the first or third notes.

Long notes were to be sustained with a swelling and diminishing strength of tone, the following quick notes set off from them by lively execution. Quantz added that, "If after quick notes several slow singing ones follow, the player's fire must be moderated immediately, and the slow notes executed with the requisite sentiment, so that they do note become boring."[2]

In an Allegro where the principal subject or theme recurred, Quantz suggested that it was to be clearly differentiated from other ideas. This was brought about by alternating dynamics of Piano and Forte, and varying the articulation, style and temperament of the theme.

Quantz wrote of the changing moods within the Allegro and how the performer should seek to express each passion suitably. The mood of gaiety was represented with short notes, moving either by leap or step, and expressed by lively tonguing. Majesty was represented with both long notes and dotted notes. The dotted notes were to be attacked sharply, executed in a lively fashion, and held long with the following notes made very short. Boldness was

characterized with notes, the second or third of which was dotted. (See Figure 45.) Quantz warned not to rush this rhythm but instead to execute it discretely.

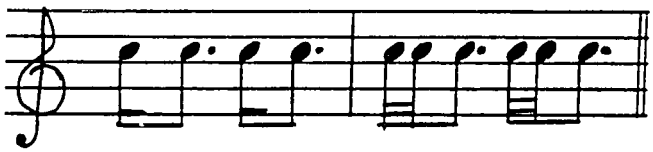


Figure 45

The Mood of Boldness Characterized
by Dotted Rhythms

Flattery was expressed with slurred notes that ascended of descended by step. Syncopation also was used to represent flattery in which the first note was played softly and the second louder, reinforced by chest and lip action.

Quantz concluded his chapter with comments on ornamentation in relation to the moods of an Allegro. He stated that a plain melody was to be embellished with appoggiaturas and other ornaments, as the passion of the moment demanded. A majestic style needed few additions, but those that were appropriate "must be executed in an elevated style."[3] Appoggiaturas and slurred notes all played in a tender style, were to be included in pieces of a mood expressing flattery. Gaiety required just the opposite: neatly ended trills, mordents, and a jocular execution.

II. THE MANNER OF PLAYING AN ADAGIO ACCORDING TO QUANTZ

Unlike his chapter on an Allegro, Quantz began this section with a

discourse on appreciation of an Adagio, stating:

> The Adagio ordinarily affords persons who are simple amateurs of music the least pleasure. There are even some professional musicians who, lacking the necessary feeling and insight, are gratified to see the end of the Adagio arrive. Yet a true musician may distinguish himself by the manner in which he plays the Adagio, may greatly please true connoisseurs and sensitive and feeling amateurs, and may demonstrate his skill to those who know composition.[4]

After this opening paragraph, Quantz explained the two ways to view an Adagio: either in accordance with the French or Italian style. To perform an Adagio in the French style, the flutist was to play in a clean and sustained manner, embellishing with appoggiaturas, trills, mordents, turns, but no extemporaneous passage work. In the Italian style, extensive ornamentation and improvisation were employed in accordance with the harmony.

Quantz recommended that performers be in a calm and melancholy mood in order to play an Adagio in the proper style. An Adagio was not to be bold but instead,soft and tender.

As with the Allegro, the types of pieces categorized under the Adagio heading were diverse, ranging from the slow and melancholy to the somewhat lively. Quantz believed that the style of playing these Adagios depended greatly upon the keys in which they were written. The keys of A minor, C minor, D sharp major, and F minor, expressed a melancholy sentiment better that other keys, in Quantz's opinion. In addition to this, he believed that all the other major and minor keys were used for happy, singing, and arioso pieces.

Quantz warned students not to play a melancholy Adagio too quickly or a cantabile Adagio too slowly. Categorized as livelier slow pieces were the Cantablie, Arioso, Affettuoso, Andante, Andantino, Largo and the Larghetto, all distinguished from the pathetic Adagio. Slow movements in G minor, A minor, C minor, D sharp major, and F minor were to be played mournfully and more

slowly than those in other major and minor keys. A slow piece in two-four or six-eight time was played somewhat quickly. A piece in alla-breve or three-two time was played more slowly than one in common time or three-four time.

Slow pieces indicated with the words "*Adagio di molto*" or "*Lento assai*" were to be embellished with slurred notes rather than extensive leaps or trills, since these incited animation and energy. Trills were to be used in a calming manner, adding a little variation to the melody. Alternating forte and piano was highly recommended by Quantz, for these gave the music light and shadow.

The technique termed "*messa di voce*" was frequently used for long notes of an Adagio, as recommended by Quantz. Starting pianissimo, the note was brought to a swell in the middle, gradually diminishing with a little finger vibrato enhancing the tapered ending.

All the notes of an Adagio were to be "caressed and flattered," according to Quantz.[5] Harshly tongued notes had no place in an Adagio unless the composer notated otherwise.

To vary an Adagio melody which was very plain, Quantz suggested adding a few notes without going into excess, being careful not to obscure the main theme. At the beginning, the principal theme was to be played as written, with a few notes added on the first repeat, and more on the second, forming running passage work. The melody was to be played in its original plain version for the third repeat. All of these added notes were to be performed with great care and composure, not rushing the tempo.

Quantz described different types of Adagios or slow pieces requiring varied styles of execution. A Grave, in which much of the melody consisted of dotted notes, was to be played in a lively and uplifting manner, embellished moderately. Dotted notes were to crescendo up to the dot, with slurs connecting

these to the following notes; in large leaps, each note was to be articulated separately. An Adagio Spiritoso usually was written in triple time with dotted notes and frequent caesuras. This was played in a livelier manner than the Grave with notes articulated rather than slurred, and fewer ornaments added.

Quantz summed up his interpretation of playing an Adagio with the following quote: "The more simply and correctly an Adagio is played with feeling, the more it charms the listeners, and the less it obscures or destroys the good ideas that the composer has created with care and reflection."[6]

III. MUSICAL INTERPRETATION ACCORDING TO BOEHM

In his chapter on musical interpretation, Boehm grouped together various concepts which served as a guide and inspiration to flutists. Above all, he stressed the importance of listening to great singers and studying song music, which would lead to a correct understanding of style. Boehm wrote: "The great wealth of beautiful German songs of Mozart, Beethoven, Schubert, Mendelssohn, and others are almost inexhaustible sources of studies for the formation of a correct interpretation and a good style."[7] Through the study of good song music, the instrumentalist would learn when and why a note was to be played staccato, slurred, or accented; when and where to place a crescendo or a diminuendo which corresponded to the words; and when a breath could be taken without breaking the sentence or phrase.

Where a theme was repeated, as the repetition of a strophe in song music, Boehm instructed flutists to take some liberties and add ornaments in "suitable places; especially in bright and light melodies."[8] (These ornaments are discussed in Chapter VIII of this thesis.)

For learning the interpretation of a cantabile, Boehm suggested

studying arias containing beautiful melodies. He also believed that flutists needed special qualifications to perform a cantabile in an artistic manner. According to Boehm, these qualifications were:

> An intelligent comprehension of the composition, a deep feeling and cultivated taste, correctly timed breathing, and a perfectly formed tone, for without these a good interpretation of a cantabile with portamento is impossible.[9]

Boehm included a brief discussion of the interpretation of portamento, apparently misunderstood by musicians of his time. He explained that the "*portamento di voce* ," gliding over from one tone to another while speaking two different syllables, was adapted to the human voice alone, yet often imitated on wind instruments with tone holes. Rather than performed as a "beautifully sung cantilena," this technique of portamento was frequently executed improperly, described as "repulsive cat music" by Boehm.[10] He stated that:

> The word portamento, seems to me to consist in a development of the legato derived from the Italian "*cantare legato* " in which all the intermediate tones are delicately and smoothly connected together like a series of pearls by a connecting thread, the latter being figuratively represented by the air stream.[11]

Boehm offered a few insights to flutists aspiring for musical performances. He commented that it was much easier to win applause by brilliant execution than to reach the audience's hearts through musical expression. Boehm also mentioned that the instrumentalist must have the power to transform the tones into words "by which he will be able to give his feelings a clear expression."[12] Finally, Boehm reemphasized the most important aspect of musical interpretation: that the flutist learn to sing upon his instrument.

IV. INFLUENCES ON THE PRESENT DAY FLUTIST

Interpretation is the element of performance that lifts the music above the merely mechanical, giving it life. Although much of this relies on personal taste, students must be guided in their pursuit through the teachings and examples of renowned pedagogues and performers. Quantz and Boehm were aware of this, including interpretation recommendations in their treatises. They believed that the performer should discern the overall style of the composition and translate it in audible form for the listener. Thus, both authors recorded performance practices and inspiring words of advice pertaining to musical interpretation and style.

From the treatise of Quantz, flutists of today, and other musicians as well, can learn much on the subject of interpretation. Regarding lively pieces, or those categorized by Quantz as "Allegro," students are first instructed to avoid rushing the tempo, a common mistake. Beginners are especially excited about playing fast, and in their haste for technical velocity, often rush through passages. One possible solution to this problem was recommended by Quantz: to avoid rushing, the first note of quick passages was to be stressed and held slightly.

Another helpful suggestion by Quantz with regards to tempo, applying to flutists of all eras, was never to play a piece more quickly than all passages could be played at uniform speed. Many students often begin a piece at a lively tempo only to find it necessary to slow down for difficult passages. These players would do well to heed the advice of Quantz, setting the tempo in accordance with the most demanding sections.

In pieces of all tempos, Allegros as well as Adagios, Quantz suggested varying a recurring subject or theme. His technique, also useful for

the modern flutist, incorporated alternating dynamics, articulations, and moods. This gave variety to a repeated theme and set it apart from other sections.

Quantz offered advice for interpreting the diverse moods of fast and slow pieces. He first distinguished the qualities representing each specific style and then recommended techniques for expression. Students of both the past and present day can benefit from Quantz's instructions, learning how to recognize and perform various moods and styles. For example, pieces of gaiety are recognizable with fast tempos, short notes, and expressed by lively tonguing. Other varieties of fast and slow pieces with their corresponding performance practices are found in Quantz's directions. An example of a slow piece is the Adagio Spiritoso, recognizable by its triple meter, dotted notes, and frequent caesuras. For this, Quantz recommended a tempo somewhat livelier than Grave, with notes tongued rather than slurred, and fewer added ornaments.

To play slow pieces well, Quantz stressed the importance of expression and insight demonstrated by the performer. Many amateur flutists of all eras have often found slow pieces uninteresting. Quantz stated that only true musicians and connoisseurs can perform and appreciate the sensitive expression of an Adagio in its beauty. According to Quantz, performers of this slow style needed to be in a calm mood to carry out the tender disposition of an Adagio. These words of advice are invaluable to all types of musicians throughout time.

Many of Boehm's ideas, useful to the contemporary flutist, coincided with those of Quantz. Boehm commented that it was easy to win applause with brilliant execution but difficult to reach the audience's hearts through musical expression. Appreciation of expressively performed slow music was as much a problem then as it is today. The average audience would rather cheer a

mediocre performance of loud and animated music than a slow piece full of expression and sensitivity.

Like Quantz, Boehm suggested varying a repeated theme by ornamentation. This is a frequently used performance practice used by musicians today as well as in the eighteenth and nineteenth centuries.

Finally, the study of song music, as recommended by Boehm, is of great benefit to all musicians in all centuries. The flutist can learn a wealth of interpretive techniques through both vocal performance and composition. The flute has long been considered one of the closest relatives to the voice. Because of this similarity, the flutist can borrow vocal ideas such as phrasing, articulations, dynamics, breathing, inflections, and nuances, incorporating these into his/her performance to create greater musicality. As Boehm put it, "The flutist must learn to sing upon his instrument."[13]

FOOTNOTES

[1]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 131.

[2]Ibid., p. 132.

[3]Ibid., p. 134.

[4]Ibid., p. 162.

[5]Ibid., p. 166.

[6]Ibid., p. 169.

[7]Theobald Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 153.

[8]Ibid., p. 151.

[9]Ibid., p. 157.

[10]Ibid., p. 157.

[11]Ibid., p. 157.

[12]Ibid., p. 146.

[13]Ibid., p. 146.

CHAPTER XI

MISCELLANEOUS TOPICS

The flute treatises of Boehm and Quantz contain miscellaneous topics on instrument care and performance practices. Boehm discussed the care of the flute, while Quantz covered the subjects of breathing and cadenzas.

Each topic examined here was unparalleled in the other flute treatises; hence, comparison of ideas between the authors is impossible. Because of this, the subsequent material will be organized in a different manner than in previous chapters. Each topic and performance practices thereof will first be analyzed, then followed by a discussion of influences on the present day flutist.

I. CARE OF THE FLUTE ACCORDING TO BOEHM

As a master mechanic of the flute, Boehm devoted an entire chapter to the subject of flute care. He described the detailed procedure of disassembling the flute for cleaning and repair. Boehm explained that all flutes would occasionally need repairs due to the wear of the metal, the breakage of springs, the lubricating oil thickening, the pads becoming injured, and dust building up, preventing easy key movement. Because of these inevitable problems, Boehm recommended that every flutist be able to undertake small repairs, not trusting the instrument to incapable hands.

To clean the flute, once disassembled, Boehm suggested wiping all surfaces with a cloth or chamois skin. He stated, "After this cleaning, the

surfaces may best be polished with a piece of fine glove leather and a fine polishing brush with the application of a little rouge, such as is used by jewelers."[1]

Above all, Boehm stressed handling the flute with care and cleanliness so that it would remain in good condition as long as possible. To avoid injuring the key mechanism, Boehm instructed flutists to grasp the instrument where there were no keys, especially during assembly. If a pad became sticky, he advised pushing a strip of printing paper under the pad, and drawing it out while pressing down the key. Dirt and moisture were consequently rubbed off the pad's skin, adhering to the paper.

Wiping both the inside and outside of the flute was very important to Boehm. In order to retard the oxidation of metal, Boehm suggested wiping the perspiration of the fingers from the keys each time the flute was put away. For both wooden and metal flutes, removing the moisture inside of the tube was of utmost concern. This moisture, which collected in the instrument's tube during blowing, affected wooden flutes especially, resulting in warps and cracks. To prevent these problems, Boehm instructed flutists to wipe out their instruments after playing. A thin swab stick of the same length as the flute's middle section and an old silk or linen handkerchief were the only tools needed for cleaning. Boehm directed students to fold one corner of the cloth over the stick and push it through the flute. Moisture was absorbed and the bore was polished by this repeated procedure which "facilitated the full and easy production of tone."[2]

II. BOEHM'S INFLUENCE ON PRESENT DAY FLUTE CARE

Many of Boehm's instructions on flute care apply to the modern day instrument. His directions for wiping the flute both inside and out are as

pertinent today as in the nineteenth century. To reduce tarnish, flutists of the modern day are advised to wipe off fingerprints after each use of their flutes using a solution of one-third part rubbing alcohol and two-thirds parts water. Although Boehm did not suggest the use of a solution, he did advocate the routine wiping of the instrument, thus retarding oxidation. Swabbing out the inside of the flute after playing is as important today as in past centuries. Even though the modern metal instrument will not warp or crack, moisture remaining in the tube can damage pads. To collect all remaining moisture in the instrument, a rod and absorbent cloth are still used today by flutists, as in the time of Boehm. For sticky pads, flutists of modern times are taught to place a cigarette paper under the pad, press down the key, and pull gently on the paper, removing dirt and build-up. Boehm's instructions for this procedure were similar, except in his use of rough printing paper. Today, cigarette paper is preferred over a coarse paper which could easily tear the thin membrane covering of modern pads.

Boehm advised all flutists of his time to be knowledgeable in general flute repair, being able to disassemble their instruments. This was essential, for instrument repairmen were not as prevalent then as in today's society. The modern flutist is urged not to repair his own instrument, often causing more damage than benefit in the process. Because the twentieth century flute has evolved into a highly intricate mechanism, only a trained repair specialist is recommended for damaged flutes. Flutists are always advised to take precautionary measures for instrument care, but repairs should be left to the master technicians.

III. BREATHING ACCORDING TO QUANTZ

Of the treatises examined, only Quantz included a chapter, although brief, on the subject of breathing. He felt that taking a breath at the proper time was "essential in playing wind instruments as well as in singing."[3] According to Quantz, musicians of his day often abused proper breathing practices, breaking up melodies and separating notes that belonged together. To help resolve this problem, Quantz cited examples of proper breathing from which general rules could be deduced. These will be discussed in the following paragraphs.

Where notes were played unequally, a breath was to be taken between a long and short note, explained Quantz. A breath was never to be taken after a short note or after the last note of a measure.

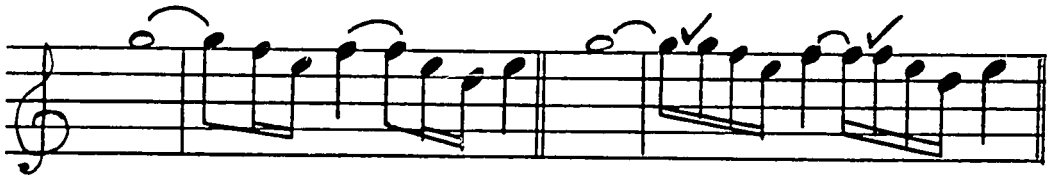
Secondly, where large intervals occurred, breathing was permitted between the notes of the leap.

Quantz also recommended taking a breath where a new musical idea began, after a cadence, or before the repetition of the principal subject, so that the end of the preceding idea and the beginning of the one that followed were separated from each other.

Where an eighth note was tied to a long note, and two sixteenth notes and another tied note followed, Quantz suggested making two sixteenth notes on the same pitch out of the eighth note, breathing between these sixteenths. (See Figure 46, p. 125.) If another tied note did not follow the first one, a breath was to be taken after the note tied to the long one without dividing it into two parts. (See Figure 47, p. 125.)

The best possible places to breathe, wrote Quantz, were after the first note of a measure and between wide intervals.

Quantz also gave advice on the physical aspect of breathing. For long passage-work, he recommended inhaling slowly by enlarging the throat, expanding the chest fully and raising up the shoulders. Flutists were to retain the air in their chests as fully as possible, blowing it economically into the instrument. If passages were too long to execute in one breath, Quantz suggested taking the breath between quick notes. The flutist was to shorten the preceding note, inhale rapidly only as far as the throat, and rush the following notes slightly, so that the beat was not late and notes were not omitted.



written played (✓denotes breath)

Figure 46

Quantz's Rule for Breathing
Between Two Tied Figures

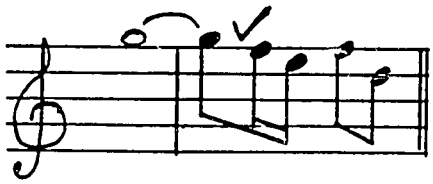


Figure 47

Quantz's Rule for Breathing After a
Single Tied Figure

Finally, Quantz advised:

> If you think beforehand that you will not be able to play the passage-work in a single breath, you will do well to take breath tranquilly and in due time, rather than wait until the last moment. The more often you take quick breaths, the more uncomfortable they become, and the less they help.[4]

IV. QUANTZ'S INFLUENCE ON PRESENT DAY BREATHING PRACTICES

As in the time of Quantz, breathing in the correct way and time is often abused by singers and instrumentalists of the present day. Playing the flute requires a considerable amount of air necessitating proper diaphragm breathing. Quantz did not teach this type of breathing, but instead directed flutists to raise up their shoulders and fill their chests with air. In contrast, the diaphragm breathing technique used today cautions against raising the shoulders. Instead, the diaphragm muscle is contracted downward and the abdomen expanded. One facet of Quantz's breathing instructions still holds true today; opening the throat and retaining this position is crucial to correct breathing and playing.

In deciding where to breathe, Quantz's instructions offer the modern flutist much useful information. In dotted rhythms, the breath should be taken after the dotted note, as recommended by Quantz. Breathing between large interval leaps, after the first note of a measure, between musical ideas, after a cadence, before the repetition of the subject, and after tied notes also holds true today as in the eighteenth century. The only practice that is not customary in the twentieth century is Quantz's method of dividing the eighth note that follows the tie into two sixteenth notes and breathing between. (See Figure 46, p. 125.) As previously stated, this was only used if another tied figure immediately followed

the first. In modern performance, the breath would be taken after the tied eighth note no matter what followed, as seen in Figure 47, p. 125.

All in all, Quantz's directions for breath placement in the music generally remain valid in the twentieth century. These practices not only apply to baroque compositions but to all periods of music. The physical method of breathing, however, has improved since Quantz's day. Following his suggestion for breathing with the upper chest, modern flutists would not have the increased air capacity afforded with the diaphragm breathing of today.

V. CADENZAS ACCORDING TO QUANTZ

Thorough in his coverage of all topics, Quantz examined the subject of cadenzas in a chapter of its own. He began with a definition of the topic, stating, "I treat here of that extempore embellishment created, according to the fancy and pleasure of the performer, by a concertante part (solo part) at the close of a piece."[5] He felt that the object of cadenzas was to surprise the listener unexpectedly at the end of a piece, and to "leave behind a special impression in his heart."[6]

Quantz believed that cadenzas were best used in slow or serious quick music. He did not encourage their use in lively and gay pieces of fast tempos.

Quantz stated that giving rules for extemporaneous cadenzas was difficult, although he managed to fill a chapter with advice on this subject. Cadenzas were to stem from the principal ideas of a piece, including short repetitions or imitations of the most pleasing phrases. This practice of using thematic materials of the composition in the cadenza was not universal in Quantz's day. Instead, many cadenzas consisted entirely of embellished scale

figures and arpeggios. Quantz recommended using thematic ideas as many musicians of his day lacked inventiveness to create new material in performance situations.

Cadenzas were of either one or two parts, stated Quantz. Those of one part were mainly extemporaneous, surprising the listeners, and sounding as if they were improvised at the moment of playing. The figures or simple intervals with which a cadenza was begun and ended were not to be repeated more than twice in transpositions, avoiding monotony.

Performers were advised to not roam into tonalities that were too remote from the principal key, with short cadenzas not modulating at all. "A somewhat longer cadenza modulates most naturally to the subdominant, and a still longer one to the subdominant and the dominant."[7] To give a cadenza variation, Quantz allowed a brief move from the major to the minor key, returning back again to the major after a short time.

For cadenzas in serious quick pieces, extended leaps and lively phrases interspersed with triplets and trills were recommended by Quantz. Melancholy cadenzas consisted almost entirely of small intervals mixed with dissonances. Quantz stressed the importance of not combining the qualities of the lively and melancholy into one cadenza, resulting in confusion.

Regular meter was not to be observed in a cadenza. Instead, Quantz advised using rhythmic variation and detached ideas rather than a sustained and steady melody.

To learn the art of cadenza invention and execution, Quantz recommended listening to several experienced performers, learning from their successes and mistakes. Musicians often used the cadenza only as an opportunity for technical exhibition, much to Quantz's dismay. He stated that,

The cadenza's greatest beauty lies in that, as something

> unexpected, it should astonish the listener in a fresh and striking manner and, at the same time, impel to the highest pitch the agitation of the passions that are sought after. You must not believe, however, that it is possible to accomplish this simply with a multitude of quick passages. The passions can be excited much more effectively with a few simple intervals, skillfully mingled with dissonances, than with a host of motley figures.[8]

Cadenzas of two parts were those performed simultaneously by two musicians in duet form. Rules of composition had greater authority over this type of cadenza. Most of these were studied in advance and memorized as it was difficult for two performers to improvise harmonious parts without prior practice.

Cadenzas in two parts generally consisted of intervals of thirds and sixths proceeding together in regular motion, and of imitations brought forward by one part and repeated by the other. Cadenzas could also be arranged in the style of a canon.

As with one-part cadenzas, it was not always necessary to be bound by a regular meter in cadenzas of two parts. The less order of tempo observed, the better, so as to avoid the appearance of premeditation.

After his explanation of one and two-part cadenzas, Quantz wrote out a few examples of these embellishments. Too numerous to record in this treatise, these cadenza examples served as guides to performers of every type.

VI. QUANTZ'S INFLUENCE ON PRESENT DAY CADENZAS

In modern editions of classical music from past eras, cadenzas not included by the original composer are later added by the editor or a renowned composer or performer. Little is left to the performer in terms of invention, although he must carefully add musical interpretation to the cadenza. Upon occasion, an advanced student will be allowed to create his own cadenza

based on foregoing performance practices. The suggestions of Quantz can be used as a guide in composing cadenzas for eighteenth century music.

Principal ideas or themes, often repeated in related keys, should be incorporated into a cadenza, as Quantz advised. Thematic material, combined with embellished scale figures and arpeggios, comprise the body of a cadenza. Ornamentation should be used with discretion. For cadenzas in quick pieces, extended leaps, lively phrases, and moderate ornamentation should be employed. Cadenzas in slow pieces should consist largely of small intervals mixed with dissonances.

Cadenzas must not be kept to a strict rhythmic flow. Quantz advocated the separation of melodic ideas rather than a sustained line of music. Tempo and rhythm must be varied in the performance of all cadenzas.

Above all, Quantz warned that cadenzas were not to merely display technical brilliance, but also stir the soul through musical sensitivity. Present day flutists often posses a high degree of technical skill and strive to impress their competition and audience through an exhibition of this ability. Modern performers would do well to heed Quantz's timeless words, advising musicians that emotions can be excited more effectively with a simple yet beautiful cadenza rather than one of complicated execution.

FOOTNOTES

[1]Theoblad Boehm, The Flute and Flute Playing, trans. and ed. Dayton C. Miller, 2nd ed., (New York: Dover Publications, 1964), p. 103.

[2]Ibid., p. 113.

[3]Johann Joachim Quantz, On Playing the Flute, trans. Edward R. Reilly (New York: Schirmer Books, 1966), p. 87

[4]Ibid., p. 89.

[5]Ibid., p. 179.

[6]Ibid., p. 180.

[7]ibid., p. 184.

[8]Ibid., p. 186.

CHAPTER XII

SUMMARY

The methods of flute pedagogy of the eighteenth and nineteenth centuries can be traced through the prominent flute treatises of Jacques Hotteterre, Michel Corrette, J. J. Quantz, and Theobald Boehm. Each source offers performance practices and information about the flute of their era. Through the study of these historical treatises, the present day flutist is able to see not only the evolution of the instrument and pedagogical techniques, but also the influence that these play on modern day performance.

Musicians must follow certain guidelines and performance practices in order to perform in a historically correct manner. The flute treatises examined in this thesis present a wealth of information in this regard. Through application of these practices, the present day flutist makes his/her performance of eighteenth and nineteenth century music more authentic.

Many of the pedagogical techniques discussed in this thesis have greatly influenced modern day flute playing. Although the instrument has undergone radical changes throughout the past two hundred years, the advice given by the authors of these flute treatises can still be of great benefit to contemporary flutists.

Theobald Boehm, credited by scholars as the man who designed the modern flute, changed the course of history not only for this instrument, but also for many other types of woodwind instruments. With the help of his geometrical diagram, the Schema, Boehm was able to calculate the necessary construction

dimensions determining the correct placement of tone holes on the flute. He also changed the head joint shape, the bore of the flute tube, the embouchure size, the material of the flute, and the system of fingering. Although his redesigned flutes were not immediately accepted, gradually they became popular and eventually replaced all other types of flutes.

Flute pedagogy in the eighteenth and nineteenth centuries dealt with basic elements as well as some of the finer points of flute playing. One essential topic covered by the treatises of Hotteterre, Corrette, and Quantz was that of correct posture. Hotteterre illustrated his posture instructions with a diagram demonstrating the correct body position for playing the flute followed by a detailed explanation. Although brief, Corrette's directions closely resembled those of Hotteterre with additional comments on finger position. Quantz's teachings offered both similar and contrasting posture instructions to the treatises of Hotteterre and Corrette. Like these pedagogues, he believed in a firm hold on the flute with fingers held close to the keys. In contrast to the suggestions of Hotteterre and Corrette, Quantz taught that fingers were to be held in a curved arch position, not flat and straight.

The development of a proper embouchure position for the mouth and lips was discussed in all four of the historical treatises. Hotteterre gave specific instructions on this subject with additional comments regarding intonation control. Corrette's directions again paralleled those of Hotteterre yet emphasized increased air intensity for higher notes. Quantz strongly opposed this, stating that on no account was the air to be increased. Instead he advocated lip and chin movement which also affected intonation. Boehm agreed with Corrette on the topic of increased the air for higher octaves and went into further detail with his discussion of air angle for various registers. As

an aid in strengthening the embouchure, Boehm recorded an exercise for long tones, still used today by many flutists.

All four of the treatises examined in this thesis included directions for articulation techniques and application. Hotteterre suggested the use of two main tongue strokes: "tu" and "ru." He gave precise rules the proper placement of these in various passages. In contrast, Corrette condemned the use of "tu-ru," stating that it was obsolete. Although he gave no replacement for this articulation, he discussed instead the performance of slurred notes with dots/lines. Quantz presented detailed instructions for many types of articulations including, use of the syllable "ti" or "di," "tiri," and "did'll" or double tonguing. He documented several examples of these articulations as an aid to students. Instead of describing the methods for producing various articulations, Boehm focused on where to place these in music. He believed that through the study of song music, flutists could learn where to apply articulations.

The topic of ornamentation was discussed by each of the treatises examined in this thesis. Hotteterre gave directions for the performance of trills or shakes, vibrati, appoggiaturas, springers, terminated trills, and mordents. Like Hotteterre, Corrette explained the proper execution of trills, mordents, appoggiaturas, springers, turns (same as Hotteterre's terminated trills), and included another ornament called "softening." Quantz was thorough in his discussion of ornaments devoting two chapters to this subject. In his first chapter he covered two types of appoggiaturas: accented and passing appoggiaturas. His second chapter he dealt with subject of trills or shakes and application of these embellishments. Boehm grouped his topic of ornamentation under the chapter heading of musical interpretation briefly discussing appoggiaturas, turns, trills, and the placement of these within the music.

Quantz and Boehm covered the subject of practice methods in their treatises. Quantz discussed such ideas as tempos, recommendations for teachers, the benefits of listening to "approved compositions" and instrumentalists of all kinds, and daily practice sessions. Boehm offered advice on playing from memory all the scales and chords of every key, practicing difficult passages, embouchure control, fingering, and playing in a relaxed manner.

The topic of musical interpretation was also analyzed in the treatises of Quantz and Boehm. Both of these pedagogues believed that this was an important aspect of flute playing. Quantz dealt with the stylistic approach of playing lively and quick pieces, grouped under the title of Allegro, and of slow pieces, grouped under the title of Adagio. Boehm combined various concepts in his section on musical interpretation. These included the importance of listening to great singers and studying song music which would lead to the correct understanding of style, the addition of ornaments to aid in expression, and a discussion of portamento.

Finally, the treatises of Quantz and Boehm offered advice on miscellaneous topics of importance to flutists. As a master mechanic of the flute, Boehm stressed the importance of instrument care and maintenance. He believed that all flutists should be able to undertake repairs on their instruments. He also gave detailed instructions for daily and periodical cleaning of the flute. Although Quantz did not discuss the care and maintenance of the flute, he did examine the important area of breathing. Quantz briefly explained the physical method for taking a breath but placed more emphasis on where to breathe in the music. Lastly, Quantz gave instructions on the invention and performance of cadenzas. He believed that cadenzas were an outgrowth of the music, utilizing short repetitions and imitations of the principal ideas of a piece.

He included advice for one and two part cadenzas.

At the end of each chapter dealing with eighteenth- and nineteenth-century performance practices is included a section discussing the influences on the present day flutist. Modern day performers can learn much from these treatises in terms of understanding the ancient flute and its idiosyncrasies, performance of music from past eras, and evolution of the music as influenced by the mechanical growth of the flute. The wise flutist would do well to study these treatises of Hotteterre, Corrette, Quantz, and Boehm and incorporate the practices found therein into his/her own performance.

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